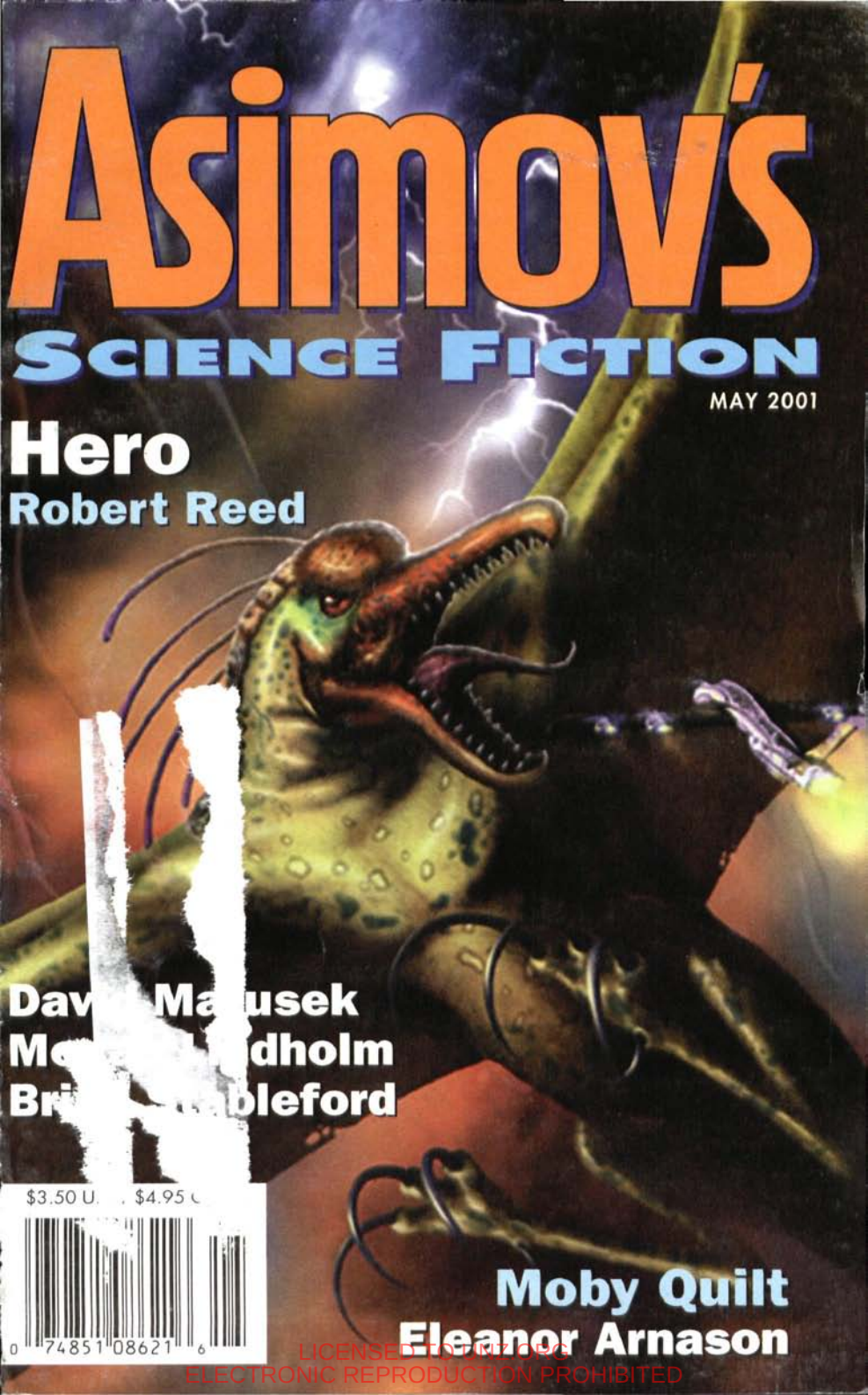

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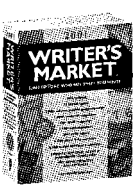

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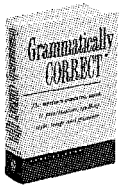

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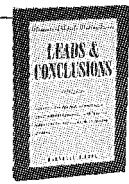

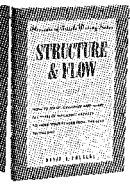

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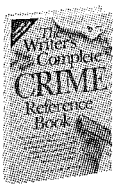

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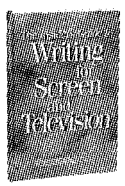

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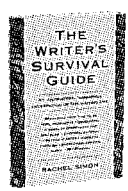

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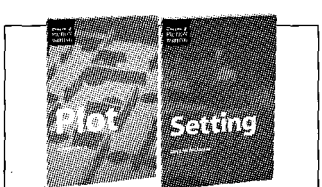

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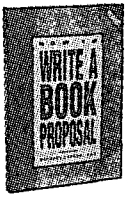

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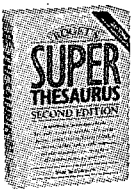

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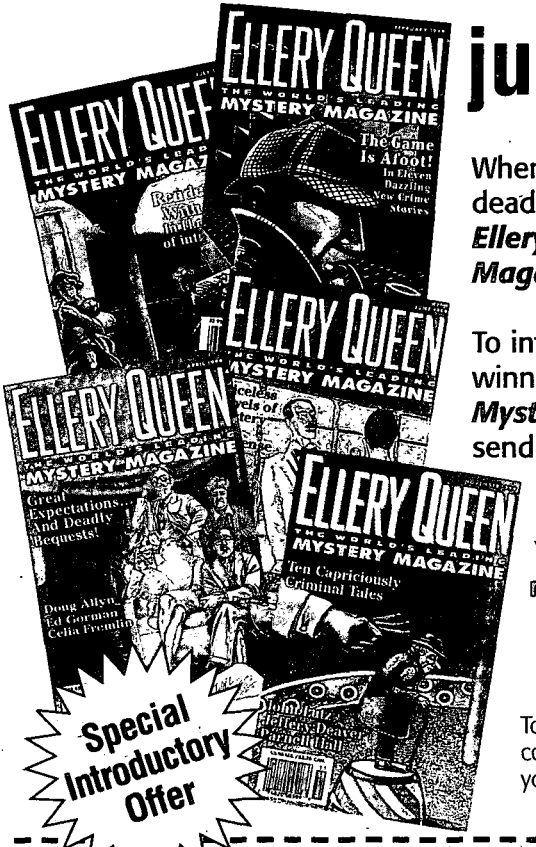

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REFLECTIONS

by Robert Silverberg

LAST OF THE GOLDEN AGE WARRIORS

The death last fall at the age of ninety-two of the great science-fiction writer L. Sprague de Camp removes from the scene the last of the key figures around whom John W. Campbell, Jr., editor of *Astounding Science Fiction,* created a phenomenal renaissance in the science-fiction world—a renaissance that has been known for the past fifty years as the era of the Golden Age.

Strictly speaking, several of the contributors to the Golden Age *Astounding* are still with us—Nelson S. Bond (ninety-two last November), Jack Williamson (ninety-three this April), and "Hal Clement" (Harry C. Stubbs), a mere lad of seventy-nine, come immediately to mind. But neither Bond nor Stubbs was really a major player in that astonishing 1938–1943 period when one editor and one magazine and one small group of newly arrived writers established the foundations of modern science fiction, and Williamson does not count as a Golden Age discovery, since he was already one of science-fiction's most famous writers long before John Campbell took over the editorial chair at *Astounding.* De Camp, though, was a central figure in the group of talented newcomers out of whom Campbell forged his Golden Age.

The December 1937 issue of the magazine then called *Astounding Stories,* and now known as *Analog Science Fiction and Fact,* was Campbell's first. Campbell, who had been a great science fiction writer himself (his most famous story is "Who Goes There?") needed some time to work off the inventory of the previous editor, F. Orlin Tremaine, under whose auspices the magazine had specialized in bold and often wildly fantastic tales of the far future, usually crudely written. Campbell's taste was a more sober one: what he wanted were smoothly told stories of the relatively near future, with realistically drawn characters and careful attention to scientific plausibility, and he let it be known he would welcome submissions from any writer, known or unknown, who could meet the standard he hoped to set. By way of signaling the change in administration, with his fourth issue he changed the name of the magazine to *Astounding Science Fiction.* And a month later he offered stories by two of his new young writers: Lester del Rey and L. Sprague de Camp.

For Del Rey, who would go on to a long and distinguished career as writer and editor, "The Faithful" was his first published story, and an instant reader favorite. De Camp had made his debut under editor Tremaine, in the September, 1937 issue, but had no further luck with his fiction until Campbell bought "Hyperpilosity" for the April, 1938 issue, the first of a multitude of de Camp stories that *Astounding* would publish. Though that one made little impact, he was back in October with "The Command," the story of a bear with a high IQ and a liking for chemistry, that touched off popular demand for a string of sequels, and his career as a science-fiction writer was launched.

Meanwhile Campbell was putting

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together the team of writers that would be the stars of his Golden Age. Jack Williamson, an *Astounding* favorite for many years, returned with the May 1938 issue and the novel *The Legion of Time.* Clifford D. Simak, who had written a few minor stories in the early 1930s, now began to hit his stride with stories in July, October, and November. L. Ron Hubbard arrived with a short story in August and a three-part serial in September, October, and November. Another future star, Henry Kuttner, made his debut in August.

But the real fireworks were still to come. July 1939 brought two literary debuts: that of A.E. van Vogt, whose "Black Destroyer" instantly attained classic status, and of Isaac Asimov, who caused less of a stir with "Trends." A month later, the new name was that of Robert A. Heinlein, with "Life-Line." Nelson S. Bond had a story in the same issue. The September issue added Theodore Sturgeon to Campbell's roster with "Ether Breather." Leigh Brackett, Ross Rocklynne, Malcolm Jameson, Eric Frank Russell, Alfred Bester, Fritz Leiber, and a host of others brought their talents to the magazine as well. By 1944 the war had drained off many of Campbell's top writers, and *Astounding* would never quite regain the supremacy it had had in the previous five years, but in those five years it had published most of the science fiction that would dominate the attention of readers when it reappeared in anthologies and books for the next two decades.

The Science Fiction Writers of America, which has recognized the contributions of many great SF writers with its Grand Master award, has given the overwhelming preponderance of those awards to Campbell's Golden Age writers, beginning with Robert A. Heinlein in 1976 and going on to Jack William-

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son, Clifford D. Simak, Fritz Leiber, Isaac Asimov, Alfred Bester, Lester del Rey, "Hal Clement," and A.E. van Vogt. Sprague de Camp was the fourth winner of the trophy, in 1978.

Though a host of great work was done during the amazing Golden Age period, the main players were Heinlein, Asimov, van Vogt, and de Camp. Heinlein stood out above everybody with his dazzling "Future History" stories. Van Vogt astonished and bewildered readers with stories like "The Weapon Shops" and "Recruiting Station." Asimov established himself as a major writer with "Nightfall" and followed it with the first "Foundation" stories. And through it all, Sprague de Camp won a large and enthusiastic readership with a multitude of stories marked by high erudition and a wry comic sense, stories so characteristically de Campian that one could identify his hand after reading only a paragraph or two.

One could easily identify Sprague himself, too, across a crowded room. He was a formidable figure, strikingly handsome, with flashing eyes, imposing eyebrows, a distinguished close-clipped goatee. He stood a little over six feet tall but seemed much bigger because of his erect military bearing and his stentorian voice. I met him somewhere around 1957 and, though I can't say we were really close friends—I had difficulties surmounting Sprague's highly formal manner and the difference of nearly a generation in our ages—we had many interests in common (archaeology and history, world travel, science fiction), and over four decades of correspondence and encounters at conventions we maintained an amiable relationship, as colleagues, that verged now and then on actual friendship. I particularly remember his kindly show of interest in me, a twenty-two-year-old newcomer, when we were both attending a small midwestern convention, and the genuinely warm weekend my wife Karen and I spent with him and his lovely wife Catherine at a convention held in Calgary more than thirty years later. (Theirs was a marriage that would last six decades, from 1939 until her death in April 2000, only seven months before his. Both lived on into their nineties.)

I would not want you to think, because I have identified him as a member of a group of writers who did their great work in a long-ago Golden Age, that L. Sprague de Camp is a figure of purely historical interest. He wrote more than a hundred books, both science fiction and fantasy, and many of them have as much to offer modern readers as the best work of Asimov, Heinlein, and Bester. Much of his best work is out of print today—much of *everybody's* best work is out of print today, alas—but some choice titles are still available, and reissues of others are in the pipeline.

De Camp's specialty, as I said, was whimsical erudition. He was a considerable scholar—among his significant non-fiction books were titles like *The Ancient Engineers, Ancient Ruins and Archaeology,* and *Lost Continents: The Atlantis Theme in History, Science, and Literature*—and he made splendid use of that scholarship in his fiction. I think my favorite among his books is *Lest Darkness Fall,* which Campbell first published in 1939 in *Unknown,* the short-lived fantasy companion to *Astounding.* It's the story, lighthearted and gripping at the same time, of a twentieth-century archaeologist transported by a bolt of lightning to the sixth century, where he strives to stave off the Dark Ages by introducing modern technology, somewhat in the manner of Mark Twain's Connecticut Yankee. Another notable de Camp story is "The Wheels of If" (*Astounding,* 1940), a rollick-

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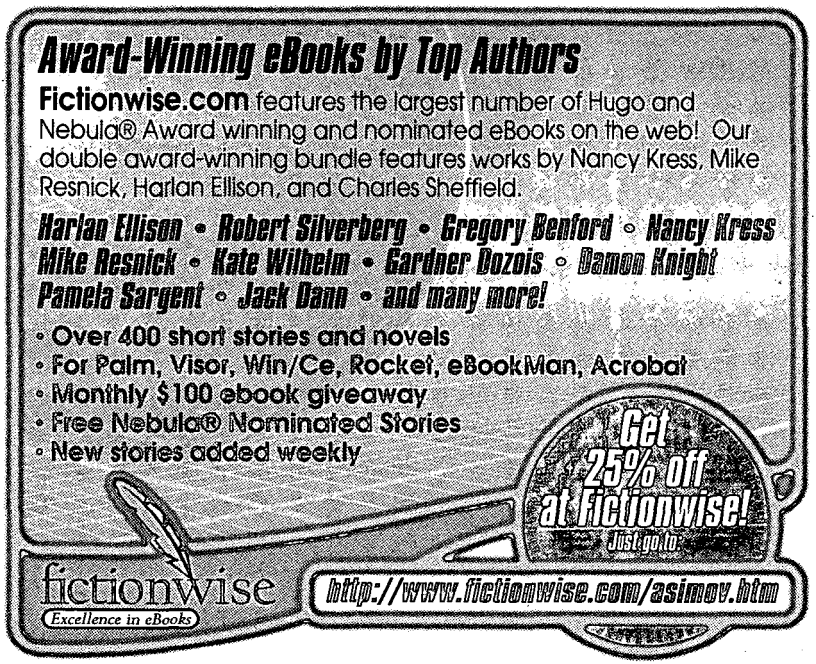
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ing alternate-universe story that transports another twentieth-century man into a mysteriously transmogrified twentieth century in which, he eventually discovers, the New World is controlled by the descendants of the Viking explorers of a thousand years earlier.

Then, too, there are the famous Harold Shea fantasies that de Camp wrote in collaboration with Fletcher Pratt: *The Incomplete Enchanter* and its various sequels. Here again de Camp sends a modern man off into worlds of fantasy, this time worlds of epic poetry (the Norse sagas, Spenser's "Faerie Queen," etc.) And his fine historical novels—*The Dragon of the Ishtar Gate, An Elephant for Aristotle,* and three others—and his biographies of H.P. Lovecraft and Robert E. Howard, and his editions of Howard's "Conan" books, which introduced Conan to the postwar generation of readers, and ever so much more—

He lived a long and astonishingly full life, went everywhere and saw everything, and set it all down on paper over half a century for several generations of delighted readers. He was an extraordinary writer, a pillar of our field, and a remarkable man as well. You can find out more about him at the web site maintained in his honor—**www.lspraguedecamp.com**—or you could hunt up his enormous Hugo-winning autobiographical volume *Time and Chance,* published by Donald M. Grant in 1996, which sets forth his colorful life and far-flung travels in four hundred huge pages.

As for John W. Campbell and his impact on the science fiction world, more about that next month. O

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On the Net

James Patrick Kelly

WEBZINES

Competition on paper

The periodical that you hold in your hand is, by many accounts, *the* premier showcase for the short form of science fiction. Although I know it will make Gardner antsy when I point this out, the fact is that he has won six **Hugos** <*http://worldcon.org/hc.html#nt*> in a row for best editor and twelve out of the last thirteen. (Of course, Sweet Sheila Williams—as Isaac used to call her in *his* column—has had something to do with this unprecedented run.) But you don't have to take just the World Science Fiction Society's word for it. Consider that the readers of **Locus** <*http://www.sff.net/locus/poll/list71.html*> have voted Monsieur Dozois best editor and **Asimov's** <*http://www.asimovs.com/*> best magazine every year since 1989. You could look it up. So why would you want to read any other magazine? And why would writers want to send their stories anywhere else?

For one thing, there is the matter of taste. While Gardner will assert that he judges each individual manuscript on its own merits, it is clear that some writers just don't do it for him and that some storytelling strategies leave him cold. Another editor may well pounce on something that Gardner has passed on, promote it to the cover of her magazine, and beam proudly when the happy author thanks her as he collects his Nebula for the story. It *has* happened. Gardner's taste is catholic, but not all-encompassing. There are many well-published and highly respected writers who have never cracked *Asimov's*. Then, of course, different magazines are intended to serve different constituencies. Our sister magazine **Analog** <*http://www.analogsf.com/*> has a proud tradition of presenting stories of science and technology, what some call "hard SF." Worthy competitor **The Magazine of Fantasy and Science Fiction** <*http://www.sfsite.com/fsf/*> proclaims in its very name that readers will discover more fantasy in the mix than they will find in our own pages. There are zines that feature space stories, some that prefer earth stories. There are horror zines and high-fantasy zines and slipstream zines.

And for those of you who rarely look away from your screens, now come the webzines.

Story surfing

Many of the webzines attempt to replicate the editorial mix of their print counterparts, offering not only stories but also art, editorials, poetry, book and media reviews, columns on the net (!), and the like. There are significant differences between print and webzines, however. For me, the most significant is that all of the sites I'm about to describe are formatted in HTML. I am tempted to rant yet again about the deficien-

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cies of HTML but I'll forbear. Let me just propose that an alternative reading of this acronym could be *hard to make legible*. This has a direct impact on content; I believe that one of the consequences of HTML formatting is an editorial preference for shorter forms. In fact, several webzines specialize in short-shorts, while online novellas are few and far between.

Another major difference is that the webzines are free. This is a mixed blessing, however. What it means is that each of them must walk a financial tightrope. Although I have no certain knowledge of this, I would be absolutely croggled to discover that any webzine was turning a profit. In fact, some were never intended to make money themselves, but exist rather to attract attention to their parental, profit-making entities. Others have been launched on the promise of future profit, although it is anyone's guess whether that promise will ever be kept. The point here is that the price webzines pay for offering their science fiction for free is a certain tendency to evanescence.

One last difference is what we might call the refresh rate. Your *Asimov's* comes every month or so. Many webzines offer new material weekly, or even *daily*. As a result, content is constantly being pushed off the front page into what is usually called the archive. I am watching the evolution of the web archive with great interest. While none of the major webzines has been in existence all that long, it is possible to conceive of a middle-aged one with a truly humongous archive. Exploring the archive of such a site might be a daunting experience, the functional equivalent of plowing through that dusty stack of unread *New Yorkers* or *National Geographics* or *Scientific Americans*. Faced with such a stack, some readers—me, for instance—could despair of ever catching up. When it's *your* office they're piling up in, it's easier to toss the bloody lot of them and start over with the latest issue. I worry that, absent some clever maintenance scheme, the web archive might become the place where yesterday's stories go to disappear forever.

Zine Scene

Faithful readers of this column—hi Mom!—may recall that some time ago I recounted the sad story of *Omni*, which went from being one of the top print markets for science fiction, to becoming a groundbreaking webzine, to . . . nothing. The redoubtable Ellen Datlow was editor of both the print and digital versions of *Omni* and after its demise was the force behind *Event Horizon*, another cutting-edge webzine that met an untimely end. You can still visit the ghosts of both **Omni** <*http://www.omnimag.com/*> and **Event Horizon** <*http://www.eventhorizon.com/sfzine/*> but be warned: nothing ever happens there anymore. Last year, the folks at the sprawl that is **Scifi.com** <*http://www.scifi.com/*> asked Ellen to start a new webzine. The impressive result is **SciFiction** <*http://www.scifi.com/scifiction/*>. On the Originals page, you'll find stories by some of the best writers working today. I haven't had time to read the entire archive (see above) but I can commend to your attention a quirky character-driven story called "The Despoblado" by Steven Utley, about time travelers traveling up a river in the Paleozoic, and the absolutely wonderful "Partial Eclipse" by Graham Joyce, about what happens when the aliens that have been secretly living with us for half a million years decide to leave. At least as interesting as the Originals page is

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the Classics page where Ellen is reprinting some of SF's greatest hits, stories like Howard Waldrop's "The Ugly Chickens," Robert Silverberg's "The Pope of the Chimps," and "When It Changed" by Joanna Russ. As of today, it is clear that SciFiction is the best story zine on the web.

But what about tomorrow? As I write this in November, a new zine is about to burst onto the scene. **The Infinite Matrix** <*http://infinite.matrix.net*> bills itself as "a journal for people who love science fiction as a literature of ideas." Edited by Eileen Gunn, the Infinite Matrix has been created as a kind of marketing tool by a company called Matrix.Net. Instead of handing out free coffee cups or mouse pads, the concept here is to give away 100 percent pure pharmaceutical-quality skiffy. According to the site, "One of Matrix.Net's venture capitalists suggested the magazine as a way of making it clear to prospective customers and potential employees that this is a company that prides itself on innovative thinking." What does this mean for the long term viability of the site? Beats me. But this is a site to watch, with a daily weblog by Bruce Sterling, and two nanotales (short-shorts) a week, one by Michael Swanwick and one by Richard Kadrey. Look for a new story and novel excerpt from an all-star cast each month, along with a review by the irreplaceable John Clute. I was allowed a peek at the site, not yet opened to the public as my deadline loomed. The first issue included an elusive but truly horrific story called "Dr. Real" by Simon Ing and an excerpt from *Dervish Is Digital* by Pat Cadigan.

A site that I have wanted to review for some time is **GalaxyOnline** <*http://www.galaxyonline.com/*>. The problem is that I can't recommend this site to all of you. For one thing, its interface is about as user-friendly as a brick wall. For another, unless you have a broadband connection to the net, looking at this site is like watching your fingernails grow. But if you have a nice fat pipe and you're willing to blunder around for a while finding the good stuff, you must check GalaxyOnline out. And hurry—I just read in **Locus** <*http://www.locusmag.com/*> that the site may be having financial problems. So what's to see? Well, this is supposed to be about fiction on the web and this site does have The Writer's Corner, which features new stories by Orson Scott Card and Nick DiChario and classic reprints by Harlan Ellison, Robert Silverberg, and Robert Heinlein and more columnists than all the other zines put together. GalaxyOnline is also where the next incarnation of *Amazing Stories* will live after it is reborn as a quarterly CD-ROM. But what really made my jaw drop at GalaxyOnline was the media. Sure, lots of it is moronic schlock, like episodes of *Land of the Lost* or the creature feature *Attack of the Giant Leeches*. But there were also three of the wonderful Max Fleischer *Superman* cartoons and all twelve episodes of *Flash Gordon Conquers the Universe* and the movie *Things to Come* with Raymond Massey, not to mention commentaries by Harlan Ellison. Uncle Harlan *kvetching* on my computer screen—oh brave new world!

Strange Horizons <*http://www.strangehorizons.com/*> is another ambitious new zine offering a weekly slate of articles, interviews, reviews, poetry, art, and stories. Editor Mary Anne Mohanraj and her enthusiastic staff seem to have a predilection for stories that deliver a short, sharp shock—for instance, a slightly silly first sale called "The Secret Number" by Igor Teper, which is about the secret integer "bleem" hidden between three and four. Bruce Holland Rogers con-

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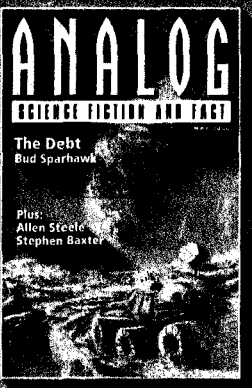

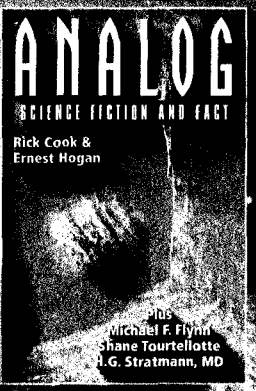

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tributes the twisty "Little Brother™," about an annoying robot baby and its impatient older brother, while Chuck Rothman offers the talky but clever "Occurrence at Arroyo de Buho Bridge."

Electric Wine <*http://www.electricwine.com/*>, edited by Diana L. Sharples and James E.M. Rasmussen, bills itself as "a magazine of science fiction, fantasy, and horror." It comes out six times a year and has just celebrated its first anniversary. Each issue contains stories from each of the three genres. It also includes poetry and the occasional review. I read several stories that just missed for me, for instance "Rituals of Age" by Bonnie Mercure Diana, which is something like **C. M. Kornbluth's** <*http://www.geocities.com/NapaValley/1872/cmk.htm*> "The Marching Morons," except for geriatrics.

Antipodean SF <*http://www.antisf.com/*> comes to the web from Australia and offers "SF Downside Up." The idea here is short-short-shorts, what editor Ion Newcombe calls flash fiction. There isn't a whole lot of time to develop traditional values of plot, character, and setting in such a brief span, and I found myself scratching my head at some of them. But the form grew on me as I read. In fact, "Europans" by Stephanie Kourie, a story about a botched first contact, reminded me of a story I wrote once upon a time (back during the Polk administration, if memory serves), only Ms. Kourie did it about as well and in a quarter of the words. And an anachronistic caveman story called "Vernon" by Rob Cox made me laugh out loud.

Quantum Muse <*http://www.quantummuse.com/*> is edited by a trio of writer/editors, Timothy O. Goyette, Raymond Coulombe, and Michael Gallant, and has been online for two years. Their front page proclaims, "We are committed to providing aspiring writers and artists with a free and open forum for expression. Loosely translated, that means we don't pay, but we don't restrict them overmuch." While the fiction does not always rise to professional standards, this is a solid and well-designed semi-pro site, worth a look.

Exit

I'm wondering whether, as webzines catch on, they might evolve a different esthetic from print zines. As I said before, given the current state of technology, I think there is already editorial drift toward the shorter lengths. But online fiction may also demand faster pacing and brighter colors. Assuming you didn't nick this copy of *Asimov's* off the newsstand, you've made a financial commitment to trusting Gardner's editorial judgment. Since you coughed up a hard-earned $3.50, you're more likely to be patient with a story that is largely character-driven or builds slowly and carefully to some mind-expanding denouement. Looking at a webzine, you'll always know that there are literally hundreds and, someday soon, hundreds of *thousands* of stories just a few clicks away. Might webzine editors not expect their writers to get on with it, already? Announce clearly in the opening paragraphs what the story is going to deliver, frontload the goodies, and then just keep on piling them on?

Gimme the remote, Maude, or else fast-forward this puppy! ○

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WE DIE AS ANGELS

We die as angels and come back as men.
No consolation that we chose to die
or that we only die to die again
or that our dying proves all death a lie.

We go to rescue others trapped in Time
lost angels dazed and blinded by despair,
who can't remember life in the Sublime
and wander angels still but unaware

and think themselves mere things with lives so brief
one melancholy wail could tell it all
trapped in the maze they build by their belief
obsessed by Bliss they cannot quite recall.

We go to wake them, but we pay the cost
that we agreed to pay before we came,
that though our sacrifice will save the Lost
we cannot go back home again the same.

Mere angels who know only perfect Bliss
who have not died to men and back again
know nothing of the taint of Time's abyss
cut off from us by what we know of pain,

turn from us there where Love and Glory sings
and hide their faces from us with their wings.

—**William John Watkins**

Illustration by June Levine

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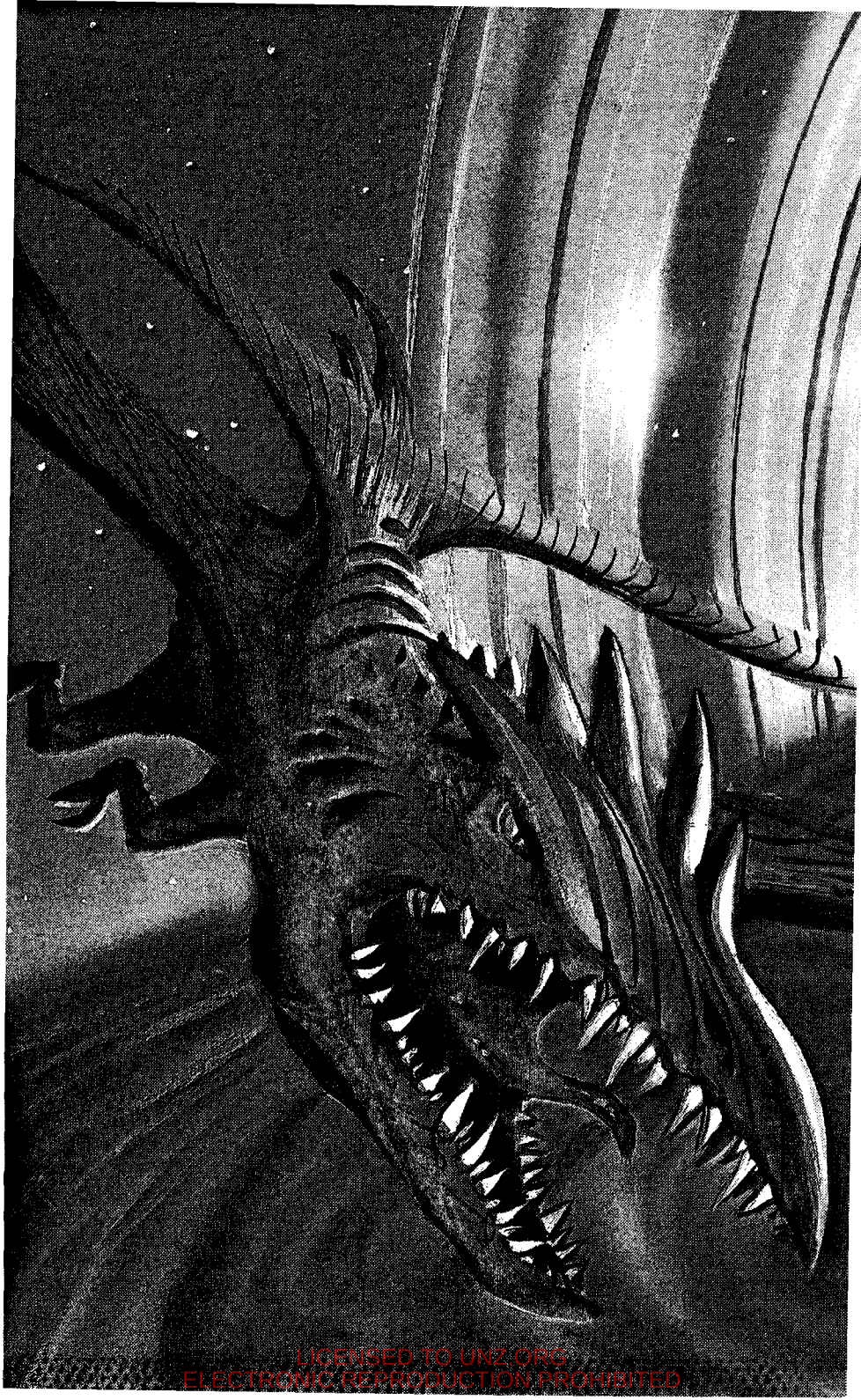
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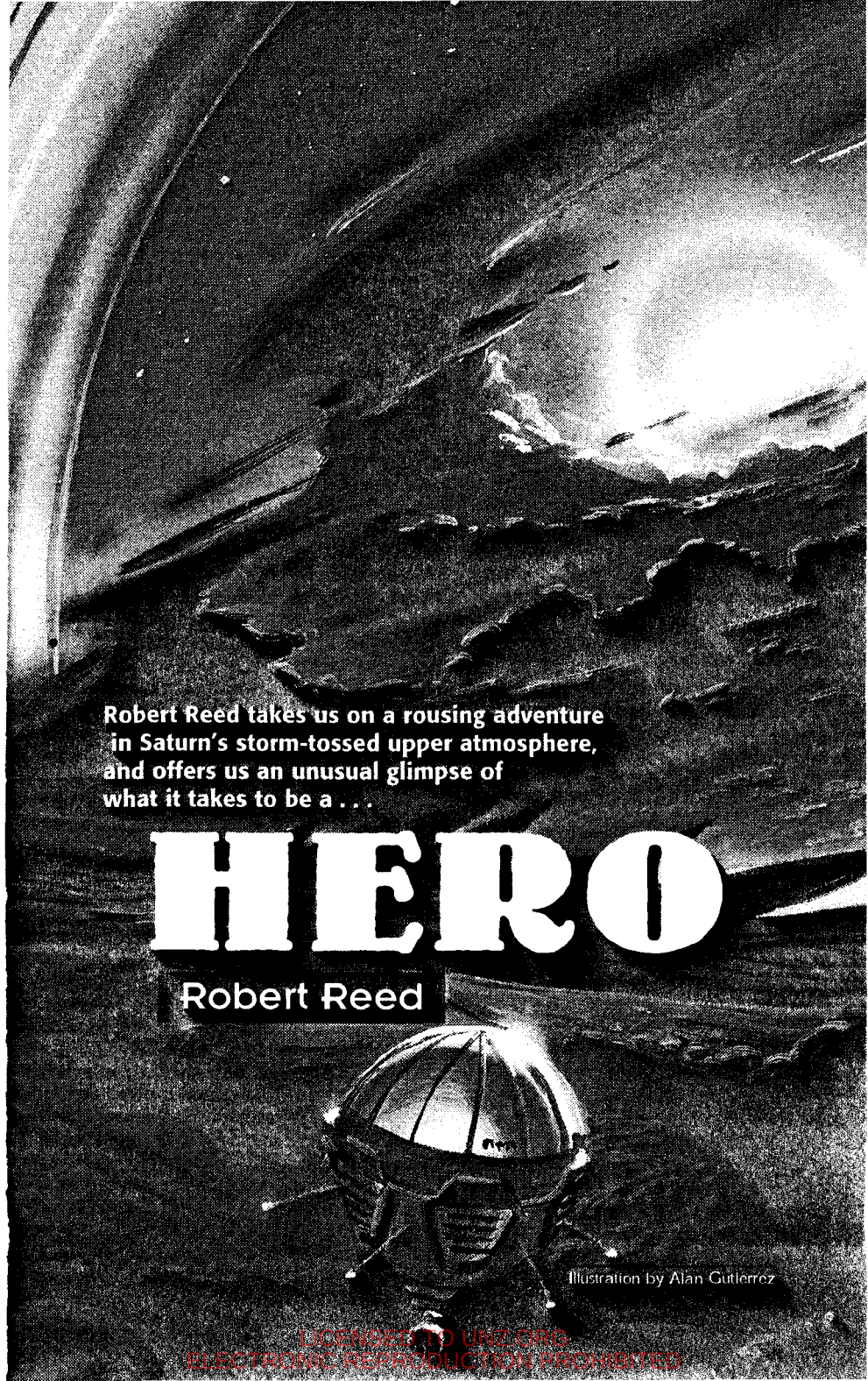

Robert Reed takes us on a rousing adventure in Saturn's storm-tossed upper atmosphere, and offers us an unusual glimpse of what it takes to be a . . .

HERO

Robert Reed

Illustration by Alan Gutierrez

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"About your man's age," said Underlawl. "And we don't mean years, although he's got a wicked number of those, too. No, we're worried about the entire package you're offering us. The wear factors. All the emergency surgeries. That mess down in the South Zone was almost a year ago, and your man's been living in seclusion since—"

"Enjoying a completely successful rehabilitation," the woman replied, looking only at me. Her name was Fair-is-fine. She was in her mid-thirties and pretty in every smart way. Thick golden hair; bright blue eyes; an athletic but distinctly feminine build.

Her entire package was holding my interest. Conspicuously ignoring my assistant, Fair-is-fine showed me a look of perfect confidence. Then with a smirk and a little wink, she promised, "My Rodney is perfectly healthy now. Tanned, and fit, and rested."

Underlawl gave a low snort. "What in hell does *that* mean?"

"It's Old Earth colloquial," I explained. "Petroleum-Age people confused sun-damaged skin with vibrant good health."

Fair-is-fine was Underlawl's age; no doubt she was quoting her old, earth-born boss.

"My Rodney," she had called him.

"Just the same," Underlawl groused. "The youngest part of your man is his new spine. And the scars that came with it, of course."

"It's the best spine ever built," boasted the other person. The other representative from Rodney's tiny camp. He had introduced himself as Supersonic Thunder, which was about the silliest name I'd ever heard. But he was in his young twenties, which is that awful age when people saddle themselves with outrageous things. Thunder was a big muscular guy, as good looking as Fair-is-fine, but in a thoroughly Y-chromosome way. And there was an easy passion in young Thunder's voice when he told us, "Our man's tough, and lucky. And he's pretty much of a legend. So I don't understand, why do we even need to *have* this ridiculous meeting—?"

"Quiet," Fair-is-fine warned.

Thunder closed his mouth and held it closed, tasting something awful.

"We're doing the ridiculous," I explained, "because I insisted. Because, if you must know, I have reservations. There's a huge capital outlay involved with any mission to Saturn. We'll need machinery and the engines to move our machinery, and us . . . and all that's going to require money. Before anything happens, I'll meet with my usual backers and show them an ocean of confidence, and I'll promise to come back alive, bringing a product that will make everyone *more* money. Because this is a business. A commercial venture. Nothing happens without the likelihood of profit." I stared at the young woman, telling her, "Your Rodney is a well-known face around Saturn, but let's be honest here. He's not on the A-list, and he's not the adventurer that every kid on Earth knows at a glance."

"Who is?" Thunder barked.

I recited five names.

"Two of those fine souls are dead," Fair-is-fine pointed out. "While the others are permanent invalids."

"Brains in cans," was Thunder's grumbling assessment.

I gave him a warning glare. "But B-lists are always ten times larger than A-lists," I pointed out, "which means that I've got fifty names to choose from. Why should I take such a risk with this particular man? What's special about *your Rodney?*"

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Our guests gave each other meaningful looks. Then Fair-is-fine touched my arm, saying, "That last expedition? To the Southern Zone?"

"Where he nearly died," Underlawl muttered.

"We buried a tag inside one of *them,*" she told me, still touching me.

"One of what?" my assistant asked.

But we knew exactly what she was telling us.

"A dorado?" I said, almost whispering.

"You can't get any signal from that tag," said Underlawl, dismissing the entire possibility. "Everyone knows. The monster's electrical fields are too intense!"

"But you *are* getting telemetry," I interrupted. "Tell me you are!"

She nodded and smiled at me, admitting, "It's an experimental design. We borrow the dorado's own currents to give our signal an extra punch."

"And you know where it is now," I guessed.

She nodded and smiled. The woman couldn't have looked more fetching; with a voice that was smart and pleasantly rough, she said, "Hire us." Then she touched the back of my elbow, adding, "If you hire us, you'll be able to find the dorado whenever you want. The most famous organism in the solar system. . . ."

It is debatable that the dorado is the most famous creature known to humanity. But there's no question that the species is firmly established on the A-list. They are huge and powerful and predatory—all good qualities when you want to intrigue the masses. It doesn't hurt that they live in the stormy atmosphere of Saturn, which is an immensely photogenic backdrop. And what helps most of all is that the creature, like any great thing found in mythology, is supremely *rare*: In the vastness of the Southern Zone, there are thought to be, according to expert guesses, barely ten thousand fully-grown dorados.

And one of those ten thousand was wearing a working tag.

After swearing my backers to secrecy, I showed them four-dimensional maps of our dorado's wanderings. Fair-is-fine was with me—we'd agreed to leave our grumpy assistants behind—and with her smooth help, I placed the creature's position to the nearest millimeter. From its location and other data, I could state with confidence, "It's flying through a storm system now, hunting." Or, "It's ingesting organic batteries now. Feeding on living-clouds." Or, "Now it's down deep, taking a little nap inside a still bubble of still air."

My backers were Titan's trillionaires: Bold souls who had made their fortunes by mining and terraforming Saturn's moons. But that was decades ago, and perhaps they had grown a little disappointed in their success. Hearing my pitch, they showed the eager expressions of children gathered around a brightly colored package. Only as an afterthought did they ask, "What will you do when you finally reach your dorado?"

We had no clear idea. But I couldn't tell them the truth, which was, "We're going to make something up." So instead, I said confidently, "Rodney Masters is going to replace the tag. It's being eroded by lightning strikes and the creature's metabolism, but if we can upgrade its machinery, and update its capacities—"

One of the lesser trillionaires interrupted, asking, "This fellow of yours, this Rodney . . . is he actually going to *walk* on the dorado?"

I hadn't said it that way. I glanced at Fair-is-fine, begging for help.

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She didn't hesitate. "He walked on it once before," she boasted. Then, with her most fetching smile, she added, "This time when he takes his walk, we'll have the best holo-cameras watching everything. Everything!"

The last walk had lasted less than twelve seconds before he was knocked free of the creature. But she neglected to mention that detail. Or that his limp body was slapped by an enormous wing. Or that the man fell nearly ten kilometers before his people managed to snag what little was left of him.

Someone thought to ask, "Where is Mr. Masters?"

I said, "Enceladus."

Then my companion added, "Rodney wanted to be here, but he's being renovated now. Making himself as up-to-the-moment and tough as possible."

It was a good phrasing, because my richest backer leaned forward, asking me, "Will this be a standard agreement?"

Half of the profits belonged to them. A quarter for my team and me. And the leftovers would fall to my new partners.

I started to nod, ready to say, "Agreed. Yes."

But Fair-is-fine had a different plan. "I believe my Rodney deserves a full third," she reported, giving me no warning. "And our media people will get the same share," she added, treating me to a wink. "And you'll have to make do with your own third of the proceeds from what, I think, will be the most successful adventure since Valdez hiked across the Nasties at the bottom of the Europan seas."

With those words, the temperature in the room plunged fifty degrees.

But despite a secret panic, I ended up happy. Thrilled, practically. Almost a billion standards were sitting in the mission accounts before we left our meeting. Without a word on my part, I had been awarded a substantial raise. And almost as sweet, Fair-is-fine left with me, her hand perched on my shoulder, happily singing, "Let's go out and celebrate."

We really should, I thought. Yes.

"You know Titan," she allowed, giving me her best smile. "What can two people do here that's really, really fun?"

Enceladus was our assembly point, and that's where I finally came toe-to-toe with our half-famous man.

At first glance, Rodney was nothing remarkable. Even with a second and third look, he resembled an aging businessman trapped on an endless vacation. He was wearing a tiny swimsuit beneath a belly that could have missed a few meals. Something in that big face and in the slope-shouldered posture reminded me of a man who was a little bored or a little lost. Yet Rodney had a presence. He was a very tall man, particularly for someone born on the Earth, and his height gave him a physical authority that the years had diminished only to a point. His hair was long and thin, gray tangles mixed with the black knots. His family tree must have been a pleasant stew of races, leaving his flesh with a perpetual caramel cast. His features were handsome at a distance, then less so as the eye drew closer. My fourth and fifth impressions were that Rodney was one of those lucky few in whom an audience could see whatever they wanted: The noble hero with a rugged heroic façade; or the hyperintelligent, ultracompetent scientist; or best, perhaps, the bland Everyman who has found himself in another glorious mess.

Fair-is-fine called to him, but it was too late. Rodney had just made his

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leap from the edge of his aerogel barge, that big body lifting high, the weak gravity and thick tropical air conspiring to slow his ascent. With a graceful bounce, the woman leaped after him. And to the best of my ability, I followed. But I've never lived long in low gravity, and I overshot them, rising too high into the sultry sky. From above, out of comfortable earshot, I watched them meet and embrace, their momentums joined. Then the bright green water of the ocean embraced them, and I lost sight of them. One of Enceladus' thousands of submarine suns was shining up into my squinting eyes.

That water was warm and brackish, covered with an invisible, selectively permeable skin that kept waves to a minimum. A thousand species of tailored and tame and always lovely fish circled beneath me. I hit slowly, feet first, the skin of the ocean splitting to let me enter. The other people were already swimming. Rodney's long arms moved with the smooth, comfortable strength of someone who had grown up around water. Naturally, I followed, and naturally, I couldn't hold the pace. By the time I scrambled from the ocean, Rodney was dry and smiling at me. I stood and offered a hand, earth-fashion, and he took it and gave me a loud, "Hello," and squeezed until I couldn't help but wince.

He said, "Sorry," for his grip.

I said, "No need to apologize."

He said of himself, "Still not accustomed to my new add-ons. You know how it is. They say it's going to be like your old hand and muscle, but it isn't. Doctors lie, and it never is."

I had no experience with such matters. Yet I said, "I understand," with a polite authority.

"Anyway, good to meet you. Finally!" Rodney was taller than me, but not by much. And he was ten or twenty years older, although the surgeries and various scars had a curious way of making him seem both boyish and pickled. His voice had changed subtly since the most recent holos. The heartiness was enlarged, and the speed seemed a little too fast, and I think that he had trouble deciding what to say. To hide his indecision, he blurted everything. "How do you like my home?" he asked. Then he inquired about our shuttle jump. He mentioned that he didn't like the overbuilt megapolis that was Titan, and how could I live there? But before I could mention that my documentaries were about people, and that's where most people lived near Saturn, he launched into a description of everything that he'd accomplished to date. "We're practically ready to fly," he promised. Then he changed subjects again, gesturing at the water, saying, "That one's mine. See the notch on the dorsal fin? She's my shark, would you look?"

On Enceladus, people keep fish as pets. But few own a fully mature great white shark, with or without the implants that keep them on their best behavior.

We watched the monster rise, begging for table scraps.

What bothered me was that gale of words and enthusiasm coming from my host, and, perhaps sensing my mood, Fair-is-fine took the old man's new hand, tugging it and saying, "Rodney? How about a tour? I'm sure your guest would like nothing better."

"I really would," I purred.

He seemed grateful to have one clear job. With a native's grace, he led us into the rounded habitat at the center of the raft, and, for the next half hour, he showed me countless mementos garnered from a lifetime of adventuring

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on the second-meanest world in the solar system. There were flat photos and still holos, and later, moving holos, and every view was staggeringly beautiful, even though the images had been captured by robots and by amateurs. There were trophies of the usual sort: Pieces of white skin peeled from formerly living-clouds; huge and delicate and extremely black organic snowflakes; egg cases tougher than any human-built armor; and even a piece of charged fat from the South Zone's megafauna. "Still holding its charge," Rodney warned me, caressing the insulated case and halfway laughing. "But you know the dangers, don't you? I've watched your last work . . . what is it now, Fair. . . ? Twenty times?" Then he shook his big head with a genuine respect, adding, "It's a wonderful thing you did. Kalib's last mission, and you managed a marvelous, perfect job of capturing everything. . . !"

I didn't want to talk about Kalib, or even think about the poor man. But after a little pause, I managed to cough out, "Thank you. Very much."

Past the lump of electrified fat was a tall window, and, looking outside, I could see night rising from the ocean depths. The suns floating beneath us were falling into their rest-modes. A sky that had been high and misty blue became black and close, punctuated with stars and little green moons, and, of course, the brilliant rings and crescent face of Saturn itself. Of course Rodney kept his raft-home where he could see the world to which he had dedicated his entire life. And noticing my gaze, he stepped up beside me, threw a big arm around my shoulder, then said, "Isn't she lovely?"

With a low voice, I warned him, "I have honest cameras."

That brought a moment of puzzled silence.

"Others might tinker with their final product," I explained. "I won't. I never make digital dress-ups, and I mean *never.* Look at any of my works, and you'll see what genuinely occurred."

Or was Rodney puzzled? I couldn't tell suddenly. That old but boyish face just kept smiling at me, and, with a tone that was almost reassuring, he told me, "That's what I expect. That's what we want. Isn't that right, Fair? Honest work. Isn't that what we've said, about a hundred million times. . . ?"

Saturn is fat with life, and most of that life is lazy.

Without free oxygen, chemical metabolisms stroll along at a fermenting pace. Only tiny bacteria can keep pace, and even then it is a fickle existence. Titanic winds carry the microbes everywhere, and most of those winds put the bugs and their spores into places too hot for organics of any kind. But the lucky few prosper for a little while, and their offspring scatter with the next blast of wind, and if you could somehow lump together every tiny critter on Saturn, their living mass would make a fair-sized moon.

Saturn is devoid of free oxygen, but it's far from energy-starved. Its atmospheric helium is raining toward the core, helping to produce staggering amounts of heat. The furnace-like interior fuels the winds and every other flavor of weather. Only the tiny and the patient can endure the supersonic gales around the world's waist, but near the poles, the winds fall away to the gentle whisper of a hurricane. Updrafts punch through the water-rich zones, building titanic thunderstorms, and, in that marginal calm, creatures have evolved that are as big as houses and hills, and sometimes, far larger.

This bulky, durable life fuels itself with what Saturn has in abundance: The staggering rivers of lightning that slice through the fierce heart of those extraordinary thunderstorms. Electrical currents replace the enzymatic burning of sugars. Organic lightning rods beg to be struck, and a por-

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tion of that juice is funneled into banks of organic batteries. Scale is critical for success. Saturn would fry small critters, and besides, any downdraft would fling beetles and condors to a premature death. It's better to sport giant wings or bulky bladders of heated gas, and those large structures demand huge banks of batteries, which in turn makes it vital to have even more lift in reserve.

The dorado is the top predator at Saturn's south pole. In shape, it resembles an albatross—a streamlined body suspended between long, long wings that are perfectly suited for soaring in the thermals. But an albatross doesn't have a mouth filled with teeth adapted for grasping and ripping and killing, or a belly that can drain the batteries of a once-living cloud. And it doesn't have window-sized eyes that can see deep into the infrared, or grasping limbs that end in hooks that drip a stew of brutal toxins. And no albatross that I've ever seen measures a full kilometer from wingtip to wingtip, patrolling a home range that was, according to Rodney's data, a little larger than the Indian Ocean.

Our ship—*The Vanguard*—was a lightweight and perfectly transparent buckysphere. Filled with pure hydrogen at less than one bar pressure, it floated in the water-rich zone, at a little more than ten bars pressure. Crew quarters and the shops lay at the bottom of the sphere, everything capped with a pressurized dome, our mass helping to keep the craft stable as it bobbed and weaved its way through the rivers of air. The South Zone had been in summer for years. The weak sunlight had to sift its way through the high clouds of ammonia and sulfurous compounds. But it was sunlight, and it was constant, and when you evolve on a photosynthetic world, you discover that even a whispery golden glow can lend you a small reassurance.

The Vanguard was a big vessel, but to save weight, and money, we'd kept things to a skeleton crew. There was Rodney and Fair-is-fine and Supersonic Thunder, plus three technicians who had worked with Rodney in the past. And there was me and there was Underlawl, and nobody else. The beauty of using the best cameras is their autonomy. They were winged and self-repairing and tough. What I did was set each of their goals and outline their aesthetics, and what my gruff assistant did was question most of my decisions, with the cameras and with everything else, too.

"We need deeper shots," Underlawl informed me. "Stuff that we can splice in later, just to set the scene."

"I don't want to risk my cameras," I countered. On Saturn, machine mortality rose exponentially as you dropped into the atmosphere. As it did with humans, too. "We'll wait," I told him. "Do the high, heavenly shots for now."

He accepted my verdict, or not. Skepticism was Underlawl's natural expression. With a doubtful voice, he warned me, "Our dorado is still a thousands klicks away and heading in the wrong direction."

"It follows a fairly well-set pattern," I reminded him. "It looks chaotic, but Rodney's model puts it near us in another two days."

"We hope."

"Which is all we can do," I added. "For the time being."

But cameras and the dorado weren't what bothered the man. Underlawl was a stiff and minimally creative soul, but he had two enormous gifts: He knew how to service and repair my cameras; and, like a good camera, he noticed everything that everyone did, and he would snitch on them without hesitation.

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"What's wrong?" I pressed.

He cleared his throat, then, with a black gravity, replied, "She goes to his cabin, you know. At night."

"And?"

"They're lovers," he informed me.

"They are," I said. "I know that."

For a moment, Underlawl seemed confused. Then he realized what I had told him, and he gave a low laugh—a very odd sound for him—and with a wide, smartassy smirk, he said, "This is a small ship, isn't it?"

It was, yes.

"You didn't understand me," he remarked.

"What didn't I understand?"

But instead of answering, Underlawl simply remarked, "I get nervous when I think too much. I really need to work on that."

Rodney was always his own pilot. Fair-is-fine had warned me about that quirk, and Thunder had boasted about it. "The old man's a better pilot than ten AIs," his understudy had trumpeted. Which was undeniably true. No two AIs can work together perfectly, and no matter how skilled, ten pilots would make a mess of the easiest flight.

Rodney himself didn't mention his peculiarity. He simply invited me on the shakedown flight, squeezing me into the cargo berth directly behind his seat, then letting us fall away from *The Vanguard* for what seemed like an eternity before he finally allowed the reactor to suck and spray.

Hands-on-stick is a position audiences don't often see; I made a note, telling my cameras to get a good long look at this aberration.

"Beautiful, isn't it?"

With the rocket firing, I was being rammed back into my own temporary seat. "What is?" I managed. "Beautiful?"

"Everything," he reported cheerfully.

"Good," I grunted.

We were climbing fast, and when enough momentum had been won, Rodney throttled back to where I could almost sit up, looking out one side of the cockpit or the other. Built for a specific job, our chase plane was like nothing else in the solar system. Its body was narrow and deep, sporting what looked like the long mouth of a baleen whale. But this whale had wings that reached out and out, and when the main rocket went to sleep, those long wings relaxed, knifing through the choppy winds, bending and twisting according to some deeply ingrained aerodynamic logic.

Rodney was flying us, and we were a young plankton-eating bird.

"It is beautiful," I agreed. "Everything is."

The canopy resembled a bird's eye, and, better than any eye, it absorbed and enlarged the faint light coming from all sides. On my left was an enormous thunderhead, orange and dirty brown when quiet, but suddenly, with an irregular rhythm, filling with a bluish-white light as a bolt or bolts of lightning danced through its interior. To my right was a squadron of smaller clouds, thin and lacy, clinging together with tendrils and white webs and static charges. These were the famous living-clouds. Normally, they worked hard to make themselves invisible, borrowing their colors from the background and dumping their heat where the high-flying dorados wouldn't see them. But the nearest dorado was twenty hours away, and the clouds must have filled their stomachs with lightning. Breeding was what mattered now,

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and this was copulation on a prodigious scale. The creatures were flashing and glowing at one another, proving their fitness to their prospective mates. The particulars of courtship and sex on Saturn are barely known; decades of remote studies and the occasional robotic probe had left oceanic gaps in our understanding. But I still felt that if those were male behemoths passing on my right, they were strutting their stuff, showing off their tail feathers and trying to make the young girls laugh.

Into that mood of biological reflection, Rodney muttered a single word.

"Pardon me?" I said.

He repeated himself, saying, "Paladin," with a distinct fondness. Even a reverence. Then he looked back over his shoulder just enough that I could make out his wide grin. "It's an old word. Means the heroic champion—"

"I've heard the word," I interrupted.

"To me, it's a quality to strive for. An ideal." What he was telling me was important; I knew it because he kept trying to make eye contact, and because our aircraft started twisting to the left as he craned his head more to the right. "I know your old friend Kalib had that quality. I met him, twice, and I could tell. And it shows in that great documentary of yours."

"Kalib was no friend," I reported.

Rodney's eyes narrowed, and he conspicuously said nothing, considering what I had just admitted.

"At best, he was a difficult man," I explained. "The two of us were always warring about the project, and everything else, too."

"But you respected the man," Rodney interjected.

"I suppose I did respect him. Yes."

"And you can't deny that he was brave."

"I can't," I said, thinking that the better word was *foolhardy.*

At last, Rodney turned his gaze forward, correcting our gliding descent. Then after another quiet while, he said, "But Kalib wasn't heroic, in your estimation. Is that what you're telling me?"

"He was no hero. No."

Rodney showed me nothing but the tangled hair on the back of his scalp.

"Kalib did big, brave things," I admitted. "He was the first lone pilot to cross a full-strength hurricane on Saturn, and his depth record will probably hold for another ten years. But the man had exactly one friend, and that was Kalib."

"Oh," Rodney rumbled, "I hope you think better of me than that. When this is all done, I mean."

I started to speak, then stopped myself.

Again, Rodney twisted his head around, smiling at me with sideways eyes. Then with a quiet and firm and decidedly thoughtful voice, he told me, "This is what heroism means to me."

I waited, and waited.

Finally, with a thinly veiled frustration, I asked, "So what is heroism?"

"This," he said, turning forward again. Correcting our course again. "A common man doing what another man desperately wants."

Our base camp was small, but not so small that two people couldn't be alone with each other, unobserved.

"What is it about this mission?" I asked. "Everyone's talking in riddles."

"Maybe you're just hearing riddles," said Fair-is-fine.

"See? That's what I mean." I touched the screen, changing our point of

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view. The huge and simply known insides of the dorado showed themselves in lucid blues and sweet peaches. I touched the screen again, enlarging what passed for the spine. The tag was there. In blinking red, *there.* Its stream of data included sonic probes of the creature's battery banks and its diffuse neurological network and those organs whose specific function could only be guessed. According to our straightforward plan, Rodney would land beside the tag, and with half a dozen safety systems deployed, he would stroll out onto the monster's back, marrying our new package of machinery with the existing tag.

The machinery rested on the far side of the shop. Contractors on Rhea had designed and built it, and I knew only as much as I needed to know about its capacities. To me, that was an elegant black box not much smaller than the man who would be dragging it across the back of a spectacular monster.

Fair-is-fine touched the screen, changing our perspective again.

"So big," I said, "and so simple, too."

"Is that a riddle?" she joked.

It could have been. But no, I meant the dorado. All that flesh, yet inside, it wasn't much more complicated than a jellyfish. There were good evolutionary reasons, and good guesses about why things had turned out as they did. For the megafauna to evolve, there must have been a stable pocket of air that held everything essential to Saturn's microbes: Water, energy, heat, and persistence. Perhaps it happened inside the eye of a hurricane spinning at the edge of the south polar region. The hurricane persisted for millions of years. Microbes filled their environment, and, finding themselves elbow-to-elbow, they were forced to get along with each other. They linked into the first crude living-clouds, dividing the jobs of life rather like colonial bacteria on the Earth had once done. But this was a faster, sloppier business. Cell samples from past dorados showed that at least eighteen species coexisted in that shared body. Living-clouds and winged whales were much the same. What we perceived as a single critter was an ensemble of one or two dozen microbes, each maintaining its own identity, all merging into a vast yet relatively simple sack of dirty water and heated air.

"Is that how you see Rodney?" Fair-is-fine asked. "Big and simple?"

I didn't answer. I made myself concentrate, reaching for the screen again, telling my cameras where they should fly and what they should watch for.

The woman set her hand on the back of my hand.

I said, "Don't."

But she left her hand there. She looked at me in a certain way, using her blue eyes to ask what was wrong.

"I'm feeling bad about things," I admitted.

"Things?"

"Yeah," I said, pulling my hand free.

The woman seemed a little hurt, or quietly angry. I didn't know her well enough to know which.

"Things?" she repeated.

Then she stood and walked away, leaving me alone in the cramped and suddenly overheated shop.

A theatrically loud voice screamed, "Range!" Then, a moment later, Thunder told everyone, "Twenty klicks horizontal, half a klick below your position."

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"Can't see it," Rodney reported. "Nothing yet."

Thunder updated his estimates. "Nineteen and a half ahead of you. Rodney? If you can, climb. It looks like there's a hole forming in the cloud tops."

A mammoth bolt of lightning fired nearby. *The Vanguard* absorbed the shock wave, shivering through its frame, then accelerated upward with the turbulence, jerking hard enough to make spectators bend at the knees.

"I can see it, Rodney! Rodney?" Thunder was using one of our standard dart-ships as a scout, letting its AI pilot lift one of my osprey-eyed cameras to a high vantage point. "Where you are, you should be able to make out its heat signature—"

I had dozens of competing cameras, but I was focusing on the three tiny cameras inside Rodney's cockpit. Like him, I could just make out a knife-thin glow emerging from the high black wall of clouds. Then the lightning came in waves, turning the air beyond into a milky stew, and our quarry dipped one of its long wings, diving back into the gathering storm, hunting for the living-clouds that were buried in the heart of the storm.

A new sensation intruded. I took a thin breath, realizing that my own heart was trying to choke me.

I looked at Fair-is-fine.

Someone said, "Shit."

Rodney had said it.

Thunder and Fair-is-fine both blurted, "What is it—?"

"Trouble," our man reported. "My pilot's . . . I don't know . . . AI problems here. . . !"

I looked at her again, remarking, "I thought he didn't use—"

"Rodney?" she interrupted. "Is it the lightning? I can't count the hits—"

"No, negative." I heard a breath taken under stress. Then he said, "Something else's wrong. She won't release control—!"

"He's losing altitude," Underlawl informed us, his voice quiet but disapproving. "If he doesn't get control—"

"Rodney, darling!" Fair-is-fine stared at the bank of controls, absorbing the wildly shifting telemetry. "Put your AI into sleep mode—"

"Tried. Negative." Another stressed breath. "No time to try again."

Our man was wearing an armored, heavily insulated lifesuit. Through the small camera lashed to the top of his crystal helmet, I saw that he was bending over. He looked like someone who, at the worst possible moment, needed to secure his boots again. Big hands in bigger gloves descended on a slick white box. The latch froze for the first two tugs. Then he used one of his gecko boots, the heel of it finally popping the latch free. "Not stuck now," said a satisfied voice. But the contents were as tough as the box itself, and what he needed to kill was a sugar-cube brain at the center.

"You're in a downdraft, Rodney!"

Who said it? Thunder?

Fair-is-fine gave a little whimper, then said, "Maybe your toolkit—"

"No time," was our man's verdict.

"He's in a dive now," Underlawl reported. Then he made sure that I noticed his burning stare before giving his prediction. A sober shake of the head was his verdict. It was exactly the expression that he had used moments before Kalib died. But he had enough poise and manners to lie, saying, "There's still time. Still."

Precious little, I knew.

A brilliant blue flash was followed by a wild sizzling roar. I was turning

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my head, looking back at my bank of images, and the flash was so sudden and bright that it blinded me for a sliver of time, forcing my eyes to blink and instinctively look away.

"What?" Fair-is-fine cried out. "Lightning?"

There was a gasping breath, followed by a mild sigh. An almost casual sigh. And our man was suddenly laughing, the blueness fading slowly inside the cockpit and his gloved hands coming into view before anything, clamped tight to the emergency stick that had deployed after the first stick was incinerated. What could have done that? I asked myself. And then, as if reading my very slow mind, Rodney reported with an almost boyish giggle, "I set off one of my flares."

In good conditions, his flares could be seen by telescopes on Titan. His suit and my cameras were built for withering heat. But I had no idea that his little ship could withstand such a sudden hot and extraordinarily bright fire.

"The piece-of-crap AI is gone," our man reported.

"Rodney?" Fair-is-fine whispered.

"Operating entirely on emergency systems," he continued. "And my nose is up!"

Underlawl gave me a look, and, as if rising up from a great depth, he breathed deeply, again and again.

"Rodney?" she repeated. "Are you all right?"

"Oh, my seat's charred pretty badly," he reported loudly. Happily. With all the élan he could muster. "But my precious ass is barely warm!"

Glancing at Fair-is-fine, I found her casting her eyes at Thunder, who just then happened to look at me—Underlawl giving the lot of us his hardest withering stare.

"Okay, you've got a minute," I said. "What is it?"

We were standing away from the others, pretending to discuss the recording of the imminent rendezvous. But after having begged for this meeting, my assistant said nothing. He lifted his hands between us, opening the fingers wide and rolling the palms up. Then finally, speaking to his empty hands, he asked, "How can a new AI fail? A proven model, under nominal conditions—"

"Sabotage," I said.

Surprise blossomed on his face, but he kept emotion out of his voice. "All right, maybe," he allowed. "Or maybe it's one of those cases where a young machine, sentient but inexperienced, loses its sanity with the first sign of danger. That happens. I can list twenty-three incidents in the last decade—"

"Sabotage," I repeated. "That's what you think it was. Just *say* it."

But the man wouldn't. He shook his head and lifted his gaze. Rodney's people were plotting out his final approach and running checks on the surviving systems. Everyone but us seemed usefully frantic. I found myself feeling very much like a spectator—which was exactly what I was. A spectator. The audience. My eyes and my sensibilities would come home with a product that would enthrall billions, or bore a few million, and everything depended on my nourishing this delicious sense of being witness to great events.

"You know how he was hurt? On the last mission, I mean?"

Underlawl had spoken. What did he say?

"Rodney wasn't just thrown off his dorado," the man reported. "Five safety harnesses failed, and the final harness hadn't properly deployed."

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"More sabotage?" I asked.

Then, before he could answer, I muttered to him, "I've seen the evidence, just like you. Only one harness snapped before it should have. And Rodney himself hadn't deployed the final harness. And if you're thinking that some conspiracy's lurking in the shadows, then what you need to point to is a suspect, and his motive."

My assistant sighed heavily, glancing my way. "I told you already," he warned.

"Told me what?"

I couldn't have looked more stupid in his eyes. Another sigh preceded the whispered words, "She disappears into his cabin."

I almost said, "I know that already."

I came a breath short of telling him, "It's none of your damned business."

But then I followed Underlawl's gaze, looking at the pretty young man with that absurd name . . . watching Thunder bend over the shoulder of the pretty woman, whispering as he pointed to a random display, causing Fair-is-fine to laugh for a careless little instant.

"Oh," was the best I could manage.

"Or maybe it's *not* him," said my assistant. "Maybe someone else did the sabotage." Then he made fists and stared at them as if one or the other held the answer, and he had only one guess to spend.

"Looking, looking!" the voice cried out. Then came a deep sigh—a gasp, really—and the single exclamation, "There!"

With dozens of vantage points from which to choose, I stared at nothing but the view from Rodney's camera, my eyes squinting exactly as his must have been, our twin gazes spying the same pale strand emerging from the roiling black of the thunderhead before pivoting, diving hard at a solitary and decidedly doomed living-cloud. Together, we watched the dorado strike its target, its great mouth extended, jaws gaping; then, with the first taste of the gossamer thin membrane, the jaws slammed together with an abruptness and a simple violence that took at least one of us by surprise.

I gave a low, breathless holler.

The living-cloud was a tattered mass and a bubble of hot hydrogen visible in the infrared, and at the center of the carnage were its fatty batteries—specks and sparkles that were deftly claimed by a tongue bigger than most rooms, then gulped down with the artful ease that barn swallows employ with horseflies.

Again, I grunted my astonishment.

Then a loud close happy voice said, "Maneuvering! While she's busy, I'll come up on her tail."

"Careful, Rodney," said Fair-is-fine.

Was she broadcasting her advice? Or was she just talking to herself?

Rodney answered my question, saying, "Darling, if I wanted to be careful, I'd be swimming with my shark now!"

Thunder spat numbers. Data. Details, and nonsense.

Underlawl was concentrating on the cameras, monitoring performances and shifting priorities as circumstances changed. We had lost three cameras, as expected. None were critical enough to bring my authority into play. I didn't have to make aesthetic or pragmatic choices. Sitting was what I was doing, and watching everything that Rodney saw as he pushed and cajoled his craft into a simple dive, the long wings withstanding the pressures bet-

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ter than any living wing could, his meaty low voice saying to his quarry, "My, aren't you the prettiest girl in this big world?"

I glanced at Fair-is-fine, entirely by reflex.

She looked worried. She looked beautiful. If she took the smallest bit of offense at Rodney's praise, it didn't show in her expression or how she sat before her bank of monitors, that full mouth dropping open and a whispery little voice saying, "Rodney," once again. "Careful . . ." And then came a brightness that filled her blue eyes and the rest of her face, an expression of astonishment or fear or simple wonder giving me that first warning that something had happened, and that it was something unplanned.

I looked back at Rodney's view.

Thunder screamed, "It's turning . . . turning its tail . . . do you see. . . ?"

Rodney said, "Yes," with a big voice.

Then he started to ask, "What can you tell me? Where is she—?"

Fair-is-fine shouted, "She's boomeranging!"

With a grace that denied its enormous bulk, the dorado had knifed into a hot thermal and spun around, one great wing collapsing long enough to let it drop hundreds of meters, and in that next long moment, the creature came back into the thermal, wings extending to trap the rising air and help carry it higher, at a bullet's velocity. The long airborne body shrank and then swelled again, chasing its next quarry with a practiced ease that made my mouth turn dry and swelled my throat to where I couldn't breathe.

"Boomeranging!" Thunder repeated.

The dorado was enormous, but it was also many tiny creatures. Like a Portuguese man-of-war, it was a colony. I suddenly recalled that very odd detail, and with the memory came the added trivia that to make such rapid motions, it had clusters and strings of neurons strewn throughout much of its lovely bulk.

The dorado looked pale and sleek in the next wild bolt of lightning.

From somewhere came the quiet sound of a man—Rodney?—calmly telling his audience, "I'm firing engines, burning out of here—"

Those matter-of-fact, inadequate words were followed by a crackling roar, and the dorado was suddenly huge in my nearest screens.

"Damn," said a slightly perturbed voice.

Then with a brittle anger that was far too small and soft for the tragedy unfolding, Rodney added, "Reactor off-line."

Fair-is-fine gave a wild little shriek.

And for an astonishingly long while, I stood before my screens, stupidly wondering why I could see nothing where I should see everything, and why that magnificent dorado, viewed from high above, looked lonely. Alone. Nothing else near that beautiful monster; nothing else flying anywhere in that ocean of wild and churning air.

"He's still alive," said someone.

Said Thunder.

His voice was astonished and doubting, and I could hear the ragged wet breath preceding the simple declaration, "His ship's in the gut now. See? See?"

Thunder wasn't speaking to me, and I wasn't looking at him. What I was doing was replaying that moment of ingestion—from a dozen vantage points, using various syrupy speeds—watching Rodney make his final turn as the great mouth engulfed the sleek little body of his aircraft, those long

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albatross wings collapsing with the jarring impact, the right wing wrenched free and sloppily tumbling away.

"You're right," said an awed little voice.

Fair-is-fine's voice.

I watched the armored body and crumpled left wing vanish into the dorado's mouth, and the mouth closed and then opened again, as if the creature had tried to spit out the inedible prize. But Rodney was too far in or jammed too tight. The mouth closed again, great muscles and the massive tongue forcing the armored body and its trailing wing into the cavernous throat, then deeper. Really, it was an astonishing sight. A numbing, impossible thing to see. It wasn't often that a man who made his living recording odd sights actually witnessed a sight that was wholly *new,* utterly incredible. But that's what I was seeing. Rodney was a modern Jonah, and an ugly piece of me couldn't help but feel lucky for this windfall. This tragedy. This absolute blessing.

"You've got to do something," said someone.

Said Underlawl.

I reset my screens to the present, turned to the others, and asked, "How do you know he's alive?"

"There's a biomedical signal," Fair-is-fine replied. She pointed at gibberish, admitting, "The interference is awful, but the signal's there. And Rodney's heart is beating."

At a terrific pace, from what I could see.

It was Underlawl who asked, "Okay, what do we do? What's possible?"

Was *anything* possible? It seemed incredible just to pose the question, much less attempt an answer. But Thunder had already considered the matter, telling us, "The dorado can't digest the meal, so it's going to want to get rid of it. See? Its guts are already pushing the ship through."

He was watching sonic images from the original tag. Rodney's ship was a bright tangle passing down a ghostly tunnel. I could see the wing and the armored body, and for a moment, I thought that I could make out the cockpit, imagining our second-tier hero sitting in that absolute darkness, still manning the useless controls.

"When he comes out," I observed, "he falls. And fast."

But everyone else had realized the obvious. It was Fair-is-fine who said, "If we could get into position with a dart-ship, and wait. . . ."

"A dart-ship," Thunder repeated, his voice flat, his expression vaguely disgusted. Then he looked at her for a long moment, finally saying, "You can't be serious. You expect me to fly in close, without camouflage—"

"Dart-ships are fast," was Underlawl's contribution.

"And wait for the dorado to *relieve* itself? Is that your plan?"

Fair-is-fine was sitting at her station. Thunder was on her right, and I was standing on her left. If I reached, I could have touched her on the shoulder. Her other suitor made certain he was standing even closer, and he stared at me as he announced, "I guess I can do that. Hang close and wait."

Emotions were thick in the room. I looked at her and at Thunder, then glanced over at Underlawl. My assistant was staring at the three of us, his expression disgusted. Scornful, and outraged. I seriously considered stepping away from the woman, relinquishing all holds on her. But then I glanced at the man-child again, and something about him—his swaggering good looks, or his youth, or his stupid name—caused me to hold my

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ground. No, I wouldn't give up my place to this pretty little boy. And in turn, he saw something that he didn't appreciate in my glowering, defiant expression.

"I'll need help," he said. "An extra set of eyes. Someone good with cameras, so I can keep close and ready."

Underlawl assumed that he was the perfect candidate. In the corner of my own eye, I saw him straightening his back, squaring his shoulders, trying to juice up his bravery to where he could at least hold onto his composure when his name was mentioned.

But it was my name that Thunder said.

Then he pointed at me, setting his free hand heavily on Fair-is-fine's shoulder, asking with the thinnest amusement, "Did you really think I'd let you miss the fun?"

The dart-ship was a pair of jointed wings wrapped snugly around an assortment of spew-rockets powered by a pair of new, top-line reactors. The sealed cockpit and tiny cargo hold felt more like afterthoughts than essentials. But the vast energies flinging us outward were reassuring, at least to my pedestrian sensibilities. We were powerful and swift, and for a little while it seemed as if we could escape everything, including the ugly tensions that nearly drowned us in the control room.

Thunder flew the ship with is own hands; he didn't wake the AI pilot, not even to tell it to let him have the helm.

I watched him flying us.

"Look down," he advised, giving me the barest glance.

We were taking a high trajectory, wings pushed back, the relatively thin atmosphere letting us eat up the kilometers. Obeying instructions, I made myself look down, guessing where our dorado might be and leaping my way through my surviving cameras, finding half a dozen perspectives that helped pinpoint the creature to the nearest millimeter. Our quarry was circling, only circling, and something about the angle of its wings or the unnatural tilt of its long head told me that the poor critter was suffering, its last meal giving it fits.

I laughed. A nervous little laugh.

With his voice tight and worried, Thunder said, "Talk to me."

I started to describe what I could see—

"No, not *you!*" he barked. Then louder, he said, "Fair? Is he alive?"

"Yes," she gushed. "His heart's awfully fast, but he's still with us!"

"His ship—?"

She said, "It's coming out . . . of the false gizzard. . . ."

"Intact?"

"Yes," she replied. "We think so."

The dorado's gizzard was bigger than some houses and had the most potent muscles in the solar system, but they couldn't even begin to dent the diamond armor encasing Rodney's hull. I reminded myself of that, and I remembered to check the camera inside our cockpit, watching the seemingly peaceful image of two men strapped into padded chairs, forced by belts to keep unnaturally still.

By chance, I was looking at Thunder when he ripped a hand off the wheel, and neatly and savagely slapped my face.

"Don't think I don't know," he rumbled.

I wasn't angry, or even startled. And the pain was negligible for those first

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moments. No, what came over me, instantly and horribly, was simple terror. I was a person paid to record details in other people's faces; yet I hadn't sensed anything, no warning given, and if I could be so terribly wrong about the obvious—

"Why'd you do it?" the young man roared.

"What?" I sputtered. "Do what?"

He hit me again, harder this time. With a closed fist, this time. Then he made himself grab the stick with both hands, pushing us into a hard deep dive. "Don't," he said. Then again, he said, "Don't!" And he glanced at my face, taking a certain pleasure in the dripping blood and my own bubbling fears. "Because I know you did it. I *know.* AIs don't fail like that, ever!"

I coughed, swallowing blood. "There's a camera watching us," I sputtered.

He said, "Good."

With my own eyes, I saw the lightning swirling inside the rising thunderhead, and with a ragged little voice, I said, "No. I didn't."

He lifted his hand again, saying, "What did I tell you?"

But I had fists ready, and an arm up to block his next swing. "I didn't," I told him, "and you're not going to make me confess to something I didn't—"

"Who the fuck else?" he shouted.

"*You!*" I said. "The same as on the *last* mission, when you sabotaged Rodney's safety harnesses. But it didn't work then, the old man's too lucky, and you had to try again. Isn't that what happened?"

The young face regarded me with an appalled expression that was almost convincing. Almost. Then with a low, furious voice, he asked, "Why would I? I love the man—!"

"You love his woman more!" I countered.

That connected. Maybe Thunder had youth and fists, but I'd found a deep weakness that left him staggering. We kept plunging into the wet depths of Saturn, and he narrowed his eyes as if fending off tears now, and with a quiet rage, he said, "You don't know. Anything. What do you know?"

I had the poor kid reeling.

But then Fair-is-fine called us, asking, "What's happening? You're going to overshoot—"

"Shit," my pilot growled.

We started pulling out of the dive, engines reversing with a high-pitched scream and the gees mounting fast, and in those rough moments, I managed to whisper, "Did she help you? With the sabotage?"

Thunder manipulated our wings, our engines.

Then, with a genuine pain, he asked, "Did she help *you?*"

The bastard. He was still trying to make me confess—

A voice screamed, "What's happening *now?*" It took a critical instant to place the voice, since I'd rarely heard that tone out of Underlawl. Then, too late by a heartbeat, he added, "It's turning again, you idiots! What the hell are you *doing?* Can't you see that it's coming around—!"

I looked up.

Both of us looked up, eyes big and round, our anger melting away as a huge and inadequate panic took hold. Emerging from the black edges of the storm was a gaping mouth, bearing straight for little us.

At last count, some twenty billion have seen the image: A passionate fight between a woman's lovers interrupted by a sudden midair collision, the two men jerked and battered within their restraints, heads twisting as their

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faces race through every imaginable emotion. Fury, and outrage, and a stunned disbelief. Plus a searing embarrassment, particularly for the young pilot who let this disaster find him. And most of our species has seen the wild terror that claimed the older man's face—a wild and bug-eyed expression that preceded the unheroic explosion of vomit that makes the scene extraordinarily messy and perfectly authentic.

It was my breakfast that splattered across the cockpit.

And it's my voice that everyone hears first, shouting at nobody in particular, "Shit. Shit. *Shit!*"

Both of Thunder's hands had jumped off the stick, and, with a quick mutter, he told the AI, "Take control. Emergency protocols!"

The rockets started to whistle and shake, then suddenly fell silent. Audiences can just hear the AI's voice calmly reporting an obstruction in its way, and then asking for further instructions. The camera perched on the ship's canopy catches the gist of what we were seeing just then. Nothing, nearly. There was an inky blackness split in two by a glowing ribbon of orange light, and, as the ribbon moved, it brightened. It acquired details and depth, and there always comes a point where the observer realizes that he or she is looking at the inside of a dorado's mouth, and that the glowing orange object rising in front of him or her was a *tongue,* and that the tongue was bigger than any full-grown whale; with a deep rasping sound, the tongue gave the trapped dart-ship a good long taste.

"It'll spit us out," Thunder promised.

But no, the tongue brightened and turned blue, betraying an interest in us. The entire mouth closed tight, as if the creature knew what we wanted. Our armor held against the pressure, but the wings complained, groaning as they began to deform . . . and Thunder finally thought to pull the wings flush to the ship's body, saving them before he wrapped both hands on the now useless stick.

"Fair!" he called out.

But there wasn't any answer. *The Vanguard* might well have been on another world, as much as we could talk to it through the crackling interference.

Thunder muttered, "Shit!"

I said something small and inadequate, like, "Sorry." I can't remember what I said, and even after cleaning up the audio, I still can't understand my own voice. But it was an apologetic sound, and with a strange, useless need to help, I started to wipe up the vomit that I'd spewed everywhere. As if it mattered. And after a few moments of flicking half-digested rations to the floor, I thought to ask, "What do we do?"

"I don't know," he admitted.

Then he said, "Shit," once again, wiping the copious sweat from his forehead and out of his blinking, confounded eyes.

"Launch us," I advised. "With our engines and armor—"

"Never," he blurted.

"Why not?" I started.

Then I realized why not, an instant before he said, "If we kill this bird, Rodney goes down with her."

"Okay. Right."

"I don't want to kill him," Thunder informed me.

"I don't want him dead, either."

"Good," Thunder replied. Then he wiped at his eyes again, watching as

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that enormous tongue started to relax again. The blue glow fell back into a ruddy glimmer, but the surrounding mouth didn't seem to loosen its grip in the slightest.

"This is crap," I said.

"What do I do?" Thunder asked. "What can I do?"

I was thinking. Waiting for inspiration.

"I don't know—"

"It's okay," I told him. "We're okay here. It isn't swallowing us, and I know it can't chew through—"

"God, I hope not!"

I sat motionless for a moment, then picked up a spare glove and wiped at my mess again.

The giant mouth suddenly tightened around us.

"Did you—?" Thunder started to blurt.

An enormous pressure was building, and the armored hull absorbed it, changing shape in subtle, useful ways, radiating a portion of those dangerous energies as a splintering roar not unlike wood planks snapping in two.

"Oh, no!" Thunder moaned.

I sat quiet and still, regretting fat portions of my life.

Then came another unexpected sound. A hatch failed. Our cargo hatch. I heard the door collapse, followed by a flood of ten bar hydrogen and dorado breath that bulled its way against the airlock behind our straightened, scared backs. We reviewed our lives with the rapid clarity of the doomed. Then Thunder looked at me, and I must have felt his eyes, turning toward him, ready to apologize for my part in this very awful mess.

You don't see my thoughts in the holo, but that's what I was going to do.

I swear it.

But then the airlock door opened with a sulfurous stench, and something enormous and filthy shoved its way between our seats, startling us. Making us jump. Then the object bent at its waist and reached with its left hand, a slime-covered glove slamming down on Thunder's shoulder as a familiar voice said, "Boys," with an easy fondness.

"How's it going, boys?" he asked us.

Then Rodney unceremoniously yanked the safety harness from around Thunder, and reaching under the young man's arms, he lifted him out of the seat, telling us with an astonishingly relaxed voice, "Time to go, boys. Time to go!"

Everyone who cares has already seen what happened next. They've seen it at least once, and in the case of certain odd souls with nothing better to do in their little lives, they have watched it better than one hundred times.

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That's nothing compared to me.

I see it again at least ten times every day, without exception. For me, this is one of those flash moments that a person never forgets or can even move beyond. Rodney's sudden appearance was the biggest, happiest surprise of my life. I was giddy with excitement. I giggled and sang and made idiot noises. Then the preset flare ignited, and the black insides of the dorado's mouth turned to a blue-white fire that blinded me for a long moment . . . and after the terrific kick of acceleration, I opened my weepy eyes, sobbing wildly as I gazed out at the wondrous vista of churning clouds, a hot rain licking across the crystal face of our cockpit.

"How?" I sputtered.

"I don't care how," Thunder gushed, pinned to the back wall by the mounting gees. "I'm just damned thankful that you got to us, old man!"

But Rodney couldn't resist giving an explanation. With both hands on the stick and a sure foot adjusting the angle of our wings, he told us, "I figured you'd come after me. And it seemed obvious that you'd wait near the butt end of things. But who knew when I'd pop into view? So I told myself, 'Rodney, it wouldn't hurt you to hurry things along here.' So I climbed out of my ship and started walking, out the stomach and back up the dorado's throat. Which was quite a walk, really. Full of surprises. You wouldn't think that such a place would be beautiful, but that's exactly what the creature's guts are. Beautiful. Gorgeous, even." Then he patted his helmet, for emphasis. "Oh, I got some good stuff on your little camera. It's here, all safe." He turned to me, winking. "I hope you can use some of it. In your final product, I mean. Although I won't pretend to know your business."

But he *did* know my business, and I used every last one of those bizarre, suffocating images. Every one of Rodney's sloppy steps inside that acid-filled stomach, and his scrambling steps along that rubbery nightmare of a throat. And in the final edit, I diced up those two or three hundred meters of wilderness, interspersing one man's rugged bravery with Thunder's hopeless indecision, and, because I am an honest man, at least, I also let the worlds watch my own gloriously and decidedly unheroic panic.

The premiere was held on Enceladus, inside a gossamer auditorium built for the occasion. And before my third cocktail at the post-premiere party, I was shown the early raves as well as AI projections of earnings. Titan alone would make a profit for my backers. Even without the Earth's vast audiences, I stood to pocket a sweet billion. And in the next two hours, when the hype was at its height and *Rodney and the Dorado* was injected into the Earth's web, I could expect another ten billion standards to flood their way into my own coffers.

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Needless to say, my backers were thrilled. They crowded around the fa-

folds deep inside the creature's belly. "Which makes it easy," more than one backer told me, feeling nothing but sincere. "Rodney and you, and Thunder, and Fair-is-fine . . . you track down the dorado again, and then . . . whatever comes to mind, I suppose. . . ."

"I suppose," I would mutter. "Except there's no Thunder. He gave Rodney his resignation. It's been an open secret for weeks now."

"Still," they would say. "Rodney's the one that counts. And you, too. But you know what I mean. . . ."

I did know, yes.

"We'll talk," they would conclude. "Soon!" Then the trillionaires were back with Rodney, pressing closer to the famous man, practically begging for a chance to touch a heroic shoulder or elbow, or just breathe the same liquored air that he breathed.

I'll admit it; Rodney looked splendid. Relaxed. Charming. Genuinely thrilled by the attentions. He was handsome one moment, and then, with a subtle change of expression, he would turn everyman-ugly. A partially deflated drink lay inside one big hand. He told a joke. His audience laughed, and laughed.

Then he mentioned some old adventure, pointing to his scarred body, explaining what was him and what was artificial, and then describing to the spellbound faces what awful horrors he had endured to obtain this badge of honor.

I drifted away from the worshipping throngs, unnoticed.

Underlawl was keeping company with three young women. Granddaughters of trillionaires, I realized. Each was trying to entice him with her looks and her money, and it was working. The perpetually suspicious man was smiling like a maniac, drinking everything handed to him, barely giving me a look as I strolled past and out the nearest door.

The auditorium was floating on the membrane-dressed sea. It was night, and Saturn was high overhead, and I didn't look at it once. What I noticed was the woman in the long sheer gown. Fair-is-fine stood alone at the railing, looking into the dark waters, but she seemed to hear my approach, saying my name with an easy fondness.

I said, "Swim with me."

She looked up. She asked, "When?"

"Now."

That brought a laugh. "I'm not dressed for a swim—" she began.

"Strip then," I suggested. Ordered.

Again, she laughed. But there wasn't any humor in her voice or in her face. She stared at me for a long moment, and then looked down at the water, pretending that she hadn't heard anything.

"I know what you did," I said.

She did an exemplary job of not reacting. Of standing motionless. Then, with the suggestion of a nod, she asked, "What? Did I do?"

"Not here," I told her.

With a touch of one hand, she caused her gown to fall away. Then she leaped, rising out over the still waters. By the time I was naked, she was gone. I had to leap and swim after her, and even still, I only caught her because she was treading water, waiting for me just so she could ask me again, "What did I do?"

"The first tag," I said. "It wasn't just a marker, was it?"

She kicked once, her shoulders rising and falling again.

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"It just seems unlikely to me," I admitted. "Not once, but *twice,* the dorado manages a complicated turn and engulfs two ships. And one of the ships doesn't even look like its natural prey."

"*I* did this?" she asked. "With the tag?"

"I can only guess how," I said. "But it would be simple enough. Rodney was undergoing his rejuvenation, and during those months, you were watching the dorado's movements, and its habits, and, from up here, *you* could see what the dorado couldn't. You could tell it where to hunt, when to turn—"

"Tell it how?"

"The sonic probes. That's my guess." I kicked harder, bringing myself up out of the water for a long moment. "It would feel the energy. Like a tickle, I'd think. And the creature doesn't have to be intelligent to be conditioned. 'Turn and bite,' would be a useful trick, for example."

She kicked and worked her arms, and said, "All right," as if deciding not to waste energy by fighting my logic. "But why would I want the dorado to eat anyone?"

"It helped make Rodney into a first-tier adventurer," I offered.

"And you're going to be a rich and famous holo artist," she allowed. "But how could I know any of that would come true?"

"You set Thunder and me against each other," I added.

"Did I?" she replied, smiling for a moment.

"You sent us after *your Rodney,* on that ridiculous ad-hoc rescue mission." Then I admitted, "Dorados are easy to train, but male humans are even easier."

Then she laughed and grinned, shaking her head as she kicked herself up to where she was looking down at me. And that's when she said, "Everything was my scheme. That's what you're telling me?"

"Unless Rodney helped you," I allowed. "But honestly, I'm not sure that he suspects any of it."

"There's nothing to suspect," Fair-is-fine told me. "And you're a very paranoid man."

"There *is,* and yes, I *am* paranoid." I kicked, moving closer to her. Then I grabbed one of her arms, saying, "I had cameras everywhere. *Everywhere.* And I bet that if I went back and looked carefully, watching your hands and how they handled the controls—"

"What do you want from me?" she blurted.

"I don't know," I admitted.

Then with her best menace, she told me, "You'd ruin your own reputation, if you even thought you had evidence that you had been fooled."

I kicked and held onto her, saying nothing.

She let me pull her closer, her breasts pressing against my gasping chest.

"I can see putting Rodney through hell," I admitted. "That makes him heroic. But why manipulate two other men—?"

"I'm not admitting anything," she told me.

But in the next breath, she said, "You know about heroes. What they need more than anything." And she tipped back her head, trusting me to hold her face above the surface, saying to the sky, to Saturn, "If you've got a hero, but he isn't all that grand . . . why, you simply surround him with *fools*. . . ."

I let her go.

And she was ready for me, already kicking, shooting up and backward with a splash that thankfully covered the rattle of her scornful laughter. ○

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LIZARD FAIRY TALES

In lizard fairy tales there are more giants.
If you are spry as legends are,
you skitter past a foot, escape
before the crushing shoe destroys you.
Such mirthful heartlessness is cruel enough,
but the true ogres wear feathers.
Bastards of the brood,
with still their remnant scales on legs,
and horrible, boiling blood that mocks
the gift of warmth from our beloved sun.
When it's too cold to move
they fly, finding helpless lizard children.
Cannibals. Icy shadows falling from above,
thrice the size of our largest hero,
with silent wings and savage beaks.
Alien. Unlizardlike.

—PMF Johnson

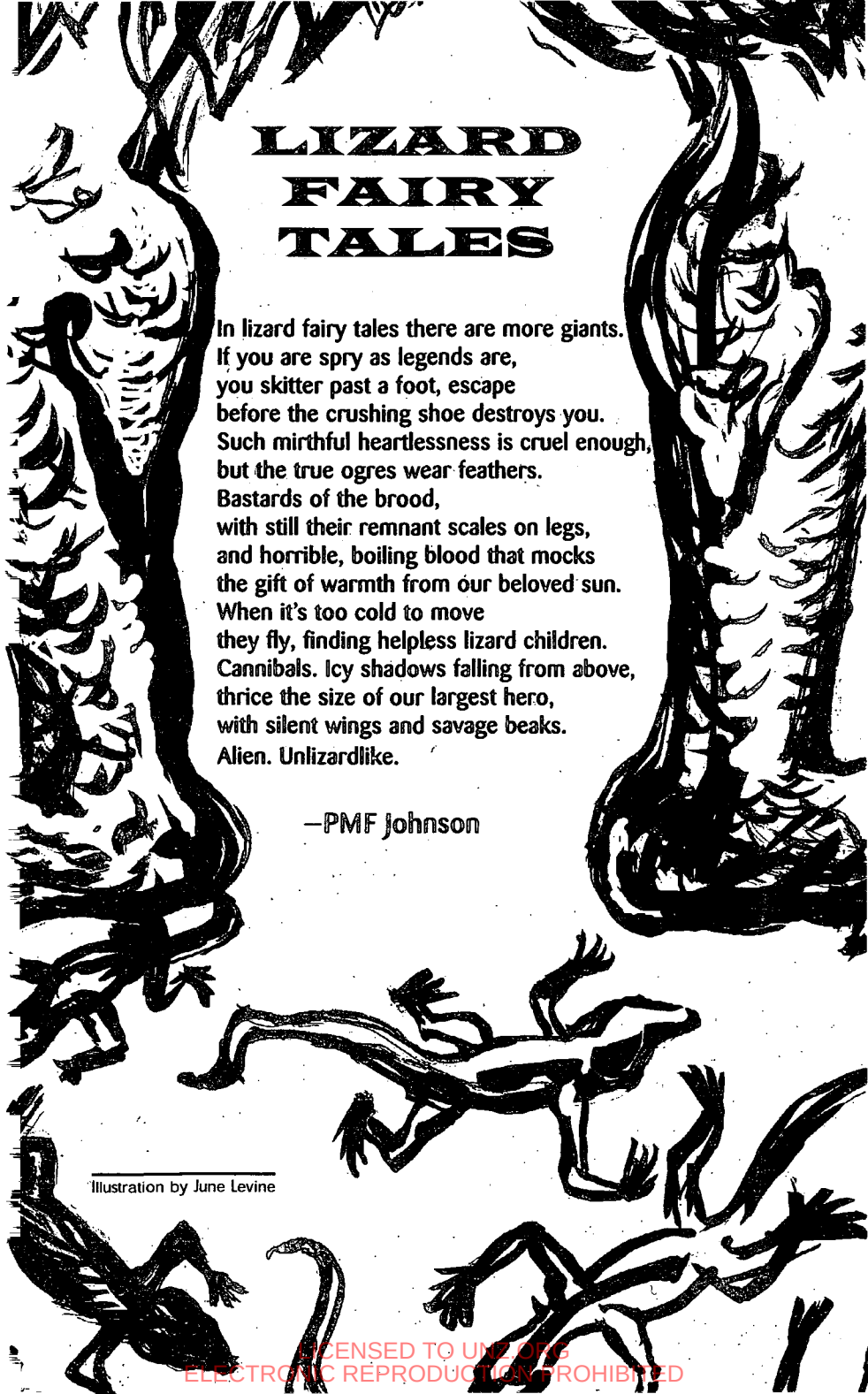

Illustration by June Levine

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CUT

Megan Lindholm

Illustration by Laurie Harden

A word of warning:
There are scenes in this story that may be disturbing to some.

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Megan Lindholm lives in Tacoma, Washington. She has been writing fantasy and some SF novels under her own name, and, more recently, as Robin Hobb, for close to twenty years, but only sporadically indulges in short stories. Over a decade ago, she splashed onto our pages with a brilliant pair of stories: Nebula finalist "Silver Lady and the Fortyish Man" (January 1989) and Nebula- and Hugo-award finalist and Asimov's Readers' Award winner "A Touch of Lavender" (November 1989). Her stunning new tale is the first story we've seen from her since then. The author's website can be found at *www.Meganlindholm.com*.

Patsy sits on a bar-stool at my breakfast counter. She is sipping a glass of soy milk through a straw. I glance at her, then look away at my rainforestcam on the wallscreen behind her. My granddaughter had an incisor removed so that she could drink through the straw with her mouth closed. She claims it is more sanitary and less offensive to other people. I don't know about "other people." It offends the hell out of her grandmother.

"So. SAT's next week?" I ask her hopefully.

"Uh-huh," she confirms and I breathe a small sigh of relief. She had contemplated refusing to take them, on the grounds that any college who wanted to rate her on a single test score was not her kind of place anyway. She swings her feet, kicking the rungs of her stool. "I'm still debating Northwestern versus Peterson University."

I try to recall something about Peterson, but I don't think I've ever heard of it. "Northwestern's good," I hedge. As I set a plate of cookies within her reach, I notice a bulge in the skin on her shoulder blade just above the fabric of her tank top. An irritated peace sign seems to be emblazoned on it. "What's that? New tattoo?"

She glances over her shoulder at it, then shrugs. "No. Raised implant. They put a stainless steel piece under your skin. Works best when there's bone backing it up. Mine didn't come out very good. Grandma, you know I can't eat those things. If the fat doesn't clog up my heart, the sugar will send me into a depression and I'll kill myself."

She nudges the plate of cookies away. I smile and take one myself. "I think that's a bit of an exaggeration. I've been eating chocolate chip cookies for years."

"Yeah, I know. And Mom, too. Look at her."

"Doesn't it hurt?" I ask, nodding at her implant. I evade the topic of her mom. It is not that I expect my granddaughter to always get along with my daughter. It is that I don't want to be wedged into the middle of it. I tell myself that this is not cowardice. By standing apart from their mother-daughter friction, I keep the lines of communication open between Patsy and myself.

My gambit is successful. "This?" She tosses her head at her implanted peace sign. "No. A little slit in the skin, then they free the skin layer from

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the tissue underneath it, slide in the emblem, put in a couple of stitches. It healed in two days, and now it's permanent. Besides. Women have always been willing to suffer for beauty. Inject collagen into your lips. Get breast implants. Have your ribs removed to have a smaller waist."

I give a mock shudder. "I never went in for those sorts of things. I think God meant us to live in our bodies the way they are."

"Yeah, right." She snorts skeptically, and picks up a cookie crumb, then licks it off her finger. I catch a brief glimpse of her tongue stud. "You made Mom wear braces on her teeth for two years. She's always telling me what a pain that was.'"

"That was different. That was for health as much as for appearances."

"Oh, let's be honest, Gran." Patsy leans forward on her elbow and fixes me with her best piercing glance. "You didn't take her to an orthodontist because you were worried she couldn't chew a steak. She told me the kids at school were calling her 'Fang.'"

I wince at the memory of my twelve-year-old in tears. It had taken me an hour to get her to tell me why. Katie was never as forthcoming with me as her own daughter is. Perhaps it's a part of the mother-daughter friction heritage. "Well, appearance was part of it. It was affecting her self-esteem. But straight teeth are important to lifelong health and—"

"Yeah, but the point is, it was plastic surgery. For the sake of how she looked. And it hurt her. But you still made her do it. For dental hygiene. So she would look like the other kids."

I feel suddenly defensive. Patsy is going over all this as if it is a well-rehearsed argument. "Well, at least it's more constructive than some of the ways you hurt yourself," I challenge her. "Tattoos, body piercing, tooth removal. It's almost like you're punishing yourself for something. It worries me, frankly, that so many people can damage their bodies for the sake of a fad."

"Hardly a fad, Gran. People have been doing it for thousands of years. It's not some weird self-punishment. It's not just that it looks good, it makes a point about yourself. That you have the will to make yourself who you want to be. Even if it means a little pain." She pokes speculatively at the heaped cookies.

"Or a lot of infection."

"Not with that new antibiotic. It kills everything."

"That's what worries me," I mutter.

I take another cookie. Nothing betrays my amusement as Patsy absentmindedly takes one and dunks it in her milk. She slurps off a bite, then says with a full mouth, "I'm getting cut myself."

"Cut?" The bottom drops out of my stomach. I'd seen it on the netnews. "Like a joint off one of your little fingers like those BaseChristian kids did? To seal their promise to never do drugs?" An almost worse thought finds me. "Not that facial scarification they do with the razor blades and ash?"

She laughs aloud and my anxiety eases. "No, Granma!" She hops off her stool and grabs her groin. "Cut! Here, you know."

"No, I don't know." How can I suddenly be so afraid of what I don't know?

"Circumcision. Everyone's talking about it. Here." While I am still gaping at her, she takes her net link from her collar and points it at my wallscreen. My rainforestcam scene gives way to one of her favorite links. I cringe at what I see. Some net star in a glam pose has her legs spread. Larger than life, she fills my wall. Head thrown back, hair cascading over her shoulders,

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she is sharing with us her freshly healed female circumcision. Symmetrical and surgically precise are the cleanly healed cuts. It is a pharaonoic circumcision, and the shaved seamed pudenda remind me obscenely of the stitched seam down an old-fashioned football. I blink and force myself to look again, but all I can see is the absence of the flesh that should be there. I turn away, sickened, but Patsy stares, fascinated. "Doesn't it look cool? In the interview, she says she did it to get a role. She wanted to show the producer her absolute commitment to the project. But now she loves it. She says she feels cleaner, that she has cut a lot of animal urges out of her life. When she has sex now . . .here, I can just play the interview for you—"

"No, thanks," I say faintly. I tap my master control and the screen goes completely blank. After what I have just seen, I could not bear the beauty of the rainforestcam with the wet, dripping leaves and the calling birds everywhere. I take a breath. "Patsy, you can't be serious."

She clips her link back onto her collar and pops back onto her stool. "You know I am, Granma. I came over here to tell you about it. At least you aren't having a meltdown like Mom did."

"She knows you want to do this?" I can't grasp any of it, not that some women do this voluntarily, not that Patsy wants to do it, not that Katie knows.

Patsy crunches down the rest of her cookie. "She knows I'm going to do it. Me and Ticia and Samantha. Mary Porter, too. We'll be like a circumcision group, like some African tribes had. We've grown up together. The ceremony will be a bond between us the rest of our lives."

"Ceremony." I don't know when I stood up. I sit back down. I press my knees together because they are shaking. Not to protect my own genitals.

"Of course. At the full moon tonight. The midwife who does it has this wonderful setting, it's an open field with these big old rocks sticking up out of it, and the river flowing by where you can hear it."

"A midwife does this?"

"Well, she used to be a midwife. Now she says she only does circumcisions, that this is more symbolic and fulfilling to her than delivering babies. But she is medically trained. Everything will be sterilized, and she uses antibiotics and all that stuff. So it's safe."

I suppose I should be relieved they are not using broken glass or old razor blades. "I don't get it," I say at last. I peer at my granddaughter. "Is this some sort of religious thing?"

She bursts out laughing. "No!" she sputters at last. "Granma! You know I don't go for that cult stuff. This is just about me taking control of my own life. Saying that sex doesn't run me, that I won't choose a man just because I'm horny for him, that I'm more than that."

"You're giving up sexual fulfillment for the rest of your life." I state it flatly, wanting her to hear how permanent it is.

"Granma, orgasm isn't sexual fulfillment. Orgasm isn't that much better than taking a good shit."

I smile in spite of myself. "Then you're sleeping with the wrong boys. Your grandfather—"

She covers her ears in mock horror. "Don't gross me out with old-people sex stories. Ew!" She drops her hands. "Sexual fulfillment—that's like code words that say women are about sex. *Women need sexual fulfillment,* like it's more important than being a fulfilled person."

We are arguing semantics when what I want to tell her is not to let some

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fanatic cut her sweet young flesh away from her body. Don't let anyone steal that much of you, I want to say. I don't. I suddenly understand how grave this is. If I become too serious, she won't hear me at all. She is poking me, trying to provoke me to act like a parent. I hold myself back from that futile abyss. I sense that Katie has already plunged to the bottom of it. Reasoning with her won't work. Get her to talk, and maybe she will talk herself out of it.

"Have you any idea how much it's going to hurt? Well, I'm sure she'll use an anesthetic for the surgery, but afterward when you're healing—"

"Duh! That would defeat the whole purpose. No anesthetic. It would go against the traditions of female circumcision throughout the world. Ticia and Mary and Sam and I will be there for each other. It will be just women sharing their courage with other women."

"Female circumcision was invented by men!" I retort. "To keep women at home and subservient to them. To take away a precious part of their lives. Patsy, think about this. You're young. Once done, you can't go back."

"Sure you can. At the midwife's site, there's a link to a place that can make you look like you did before. Here." She is fiddling with her netlink. I press the OFF on my master control again.

"That's appearance, not functionality. They can't restore functionality. How would they make you a new clitoris?"

"Are you sure?"

"Yes. And you should know that much before you get into this. I can't understand how that woman can do this to girls." The parent part is getting the better of me. I clamp my lips down.

Patsy shakes her head at me. "Granma! It has always been women doing it to other women, in all the cultures. Look." She reaches over to push my master button back ON. "Here's a link to the midwife's website. Go look at it. She has all the historical stuff posted there. You like anthropology. You should be fascinated."

I stare at her, defeated. She is so sure. She argues well, and she is not stupid. She is not even ignorant. She is merely young and in the throes of her time. Patsy will do this if she is not stopped. I don't know how to stop her. Her words come back to me. Women doing it to other women. Women perpetuating this maiming. I try to imagine what this midwife must be like. I try to imagine how she began doing this to other women, how she could find it fulfilling. I can't. "I'd have to meet her," I say to myself.

Patsy brightens. "I hoped you would. Look. On her site, my link is the Moon Sisters. Our password is Luna. Because we chose the full moon. There's pictures of us, and the date and time and place. You're invited. Mary wanted to have a webcam on the ceremony, but we voted her down. This is private. For us. But I'd like you to be there."

"Will your mom be there?"

Again her snort of disbelief. "Mom? Of course not. She gets all worked up whenever I talk about it. She threatened to kill our midwife. Can you believe that? I asked her if she ever bombed abortion clinics when she was younger. She said it wasn't the same thing at all. Sure it is, I told her. It's all about choice, isn't it? Women making their own sexual choices." Her beeper chimes and she leaps from the stool. "Wow, I've got to get going. Teddy's going to drive me out there. He won't stay, of course. This is only for women."

I make my last stand. "How does Teddy feel about this?"

She shakes her head at me. "You just don't get it, Granma. It's not about

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Teddy. It's my choice. But he's excited. After this, if I have sex with him, he'll know it's not because I'm horny at the moment, but because I want to give that to him. And I think he's excited because it will be different. Tighter because of how she sews us up. You know men."

She doesn't wait for an answer from me, which is good, because right now I am sure that I don't even know women, let alone men. As soon as she is out the door, I phone Katie. In a moment, I see her in the inset of my wall screen, but she does not meet my eyes. She is looking past me, at something on her own wallscreen. Her hand is uplifted, guiding a tinkerbell pointer device. Her blue-green eyes are rapt with fascination. I stare for a moment at my beautiful talented daughter. By a supreme effort of will, I don't shriek, "Circumcision! Patsy! Help!" Instead I say, "Hi, whatchadoing?"

"Sorting beads from the St. Katherine site. It's fascinating. You know my beadmaker from the Charlotte site? Well, I'm finding her work here, too. They're unmistakably hers from the analysis. Which means these people traveled over a far greater area than we first supposed." She moves the tinkerbell in the air, teasing a bead on her screen into a different window.

"Or that the trade network was greater," I suggest as I smile at her. Despite my current panic, I have to smile at the sight of her. She is so intent, her eyes roving over her own screen as she continues working. When she is enraptured in her archaeology like this, she suddenly looks eighteen again. There is that huntress-fierceness to her stare. I am so proud of her and all that she is. She nods her agreement. I know she is busy, but this is important. Still, I procrastinate. I love to see her like this. Soon enough I will have to shatter her ardent focus. "Do you ever miss actually handling the beads and the artifacts?"

"Oh. Well, yes, I do. But this is still good. And the native peoples have been much more receptive to our work now that they know all the grave goods will remain in situ and relatively undisturbed. The cameras and the chem scanners can do most of the data gathering for us. But it still takes a human mind to put it all together and figure out what it means. And this way of doing it is better, both for archaeology and anthropology. Sometimes we're too trapped in our own time to see what it all means. Sometimes we're too close, temporally, to understand the culture we're investigating. By leaving all the artifacts and bones in situ, we make it possible for later anthropologists to take a fresh look at it, with unprejudiced eyes." She glances up at me and our eyes meet. "So. You called?"

"Patsy," I say.

She clenches her jaw, takes a breath and sighs it out. The intent eighteen-year old anthro student is gone, replaced by a worried, tired mom. The lines in her face deepen and her eyes go dead. "The circumcision."

"Yes. Katie, you have to stop her!"

"I can't." She looks away from me, staring fiercely at her beads as if she will find some answer there.

"You can't?" I am outraged.

She is weary. Her voice trembles. "Legally, her body is her own. Once a child is over fourteen, a parent cannot interfere in—"

"I don't give a damn about legal—" I try to break in, but she continues doggedly.

"—any decision the child makes about her sexuality. Birth control, abortions, adopting-out of children, gender reassignment, confidential medical treatment for venereal disease, plastic surgery—it's all covered in that

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Freedom of Choice act." She gives me a woeful smile that threatens to become a grimace. "I supported that legislation. I never thought it would be construed like this."

"Are you sure it covers things like this?" I ask faintly.

"Too sure. Patsy has forced me to be sure. Shall I forward all the web links to you? She has, in her typical thorough way, researched this completely . . . at least in every way that supports her viewpoint." She shrugs helplessly. "I gave her a set of links to websites that oppose it. I don't know if she looked at them at all. I can't force her."

I realize I have my hand clenched over my mouth. I pull it away. "You seem so calm," I observe in disbelief.

For an instant, her eyes swim with tears. "I'm not. I'm just all screamed out. I'm exhausted, and she has stopped listening to me. What can I do?"

"Stop her. Any way you can."

"Like you stopped Mike from dropping out of school?"

Even after all the years, I feel a pang of pain. I shake my head. "I did everything I could. I'd drop your brother off at the front door, I'd watch him go into the school, and he'd go right out the back door. Battling him was not doing anything for our relationship. I had to let him make that mistake. I stopped yelling at him in an effort to keep the relationship intact. At least, it saved that much. He dropped out of school, but he didn't move out or stop being my son. We could still talk."

"Exactly," Katie says. She stares past me at her screen but I have broken the spell. She can no longer forget her daughter's decision in wonder at some ancient beadmaker's work. "I was quite calm last night. I told her that all I asked was that she always remember the decision was hers and that I completely opposed it. 'Fine,' she said. 'Fine.' At least this way, she'll come back here after the damned ceremony instead of overnighting in a circumcision hut with just the other girls. If she gets an infection or doesn't stop bleeding, at least I'll know about it and can rush her to the hospital."

"Can you legally still do that?" I ask with bitterness that mocks, not her, but the society we live in.

"I think so." She stops speaking and swallows. "Pray, Mom," she begs me after a moment. "Pray that when the other girls scream, she loses her courage and runs away. That's my last hope."

"It's a slim one, then. Our Patsy never lacked for guts. Brains, maybe, but not guts." We smile at one another, pride battling with despair. "Once she's said she'll do a thing, she won't back down no matter how scared she is. She'll let that woman cut her up and sew her tight rather than be seen as a coward by her friends."

"It's the baby I feel sorry for," Katie says suddenly.

"Baby?" All the hair on my body stands up in sudden horror.

"Mary's baby. She decided to have her baby done, the midwife is doing the baby first."

I didn't even know Mary had a baby. She is only a year older than Patsy. "But she can't! She has no right to make a decision like that, to scar her daughter for the rest of her life!"

Again the bitter smile makes Katie a sour old woman I don't know. "It's the flip side of the Freedom of Choice act. The compromise Congress made to get it passed. Under the age of fourteen, a parent can make any choice for the child. Mary is Bartolema's mother. It's her decision."

"It's barbaric! It's abusive!"

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"You had Mike circumcised when he was two days old."

That jolts me. I try to justify it. "It was a different time. Almost all boys were circumcised then. Your dad and I didn't even think about it, it was just what you did. If the baby was a boy, you had him circumcised. They told us it made it easier to keep the baby clean, that it helped prevent cancer of the penis, that it would make him like all the other boys in the locker room."

"They did it without anesthetic."

I am silent. I am no longer sure if we are talking about Mary's baby girl, or my own tiny son, all those years ago. I remember tending to the fresh cut on his penis, dabbing on petroleum jelly to keep his diaper from sticking to it. I am suddenly ashamed of myself. I had not hesitated, had not questioned it, all those years ago. I had charged ahead and done what others told me was wise, done what everyone else was doing.

Just like Patsy.

The silence has stretched long, and said more than words. "She invited me to be there," I say quietly. "Do you think I should go? Is that like giving my approval?"

"Go," Katie pleads quickly. "If it all goes wrong, you can rush her to a hospital. She won't tell me where it is, and I won't ask you to betray that confidence. But be there for her, Mom. Please."

"Okay," I say quietly. I've said it. I'll go watch her daughter and my granddaughter be maimed.

Katie has started to cry.

"I love you, baby. You're a good mom," I tell her. She shakes her head wildly, tears and hair flying, and breaks the connection.

For a time I stare at my rainforest. Then I get up. There is a backpack in the hall closet. I take it to the bathroom and begin to put things in it. Clean towels. Bandaging. I shudder as I put in the alcohol. I try to think what else. There is a spray antiseptic with a "non-sting, pain relieving ingredient." Feeble. What else should I take, what else? I stare into the medicine cabinet but find no help there.

I draw a breath and look in the mirror. Katie's face is an echo of mine, made perfect. Patsy, I see you in my green eyes and almost cleft chin. They are mine, the woman and the girl, the daughter of my body and my daughter's daughter. Born so soft and pink and perfect. I make my arms a cradle and wish they were both still mine to hold and protect. Protect. It is what a mother does, and no matter how old one gets, one never stops being a mother.

I grope behind the stacked towels on the shelf and take it down. Shining silver, it slips from the holster, releasing the smell of Hoppes Oil. There is a horsie on the handle. Fred always loved Colts. There is a dusty box of ammunition, too. I break it open, and begin to fill the empty cylinders, one by one. The bullets slide in like promises to keep.

I am suddenly calm. Don't be afraid, baby. Not my baby, not Mary's baby, no one's baby need fear. Granma is coming. No one's going to cut you.

I think for a moment of what a mess I'm going to make of my life. I think of the echoes that will spread out from one bullet, and I wonder how Patsy and her friends will deal with it, and what it will do to Katie. This is *my* freedom of choice, I tell myself fiercely. My turn to choose. Then I know I am too close to any of it to understand. Maybe we should just leave the midwife's body where it falls. In situ. Perhaps in a hundred years or two, someone else will know what to make of it all. ○

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THE LESSON HALF-LEARNED

Daniel Abraham

Daniel Abraham lives in New Mexico, where he earns his keep as the director of technical support at a local ISP. "The Lesson Half-Learned" is his fourth story to appear in *Asimov's*. It was written in response to an assignment from Connie Willis—to whom he is eternally grateful.

Otah took the blow on his ear, the flesh opening under his teacher's rod. Tahi-kvo pulled the thin lacquered wood through the air with a whirring sound like the fluttering of a bird in flight. Otah's discipline held, and he did not cry out. Tears welled in his eyes, but his mouth and hands remained in the pose of greeting.

"Again, and correctly," Tahi-kvo said.

"I am honored by your presence, most high Dai-kvo," Otah said, as if it were the first time he had attempted the ritual phrase. Tahi-kvo did not sit, and the white-haired Dai-kvo at his table nodded faintly. Tahi-kvo made a satisfied sound in the depths of his throat.

Otah showed his hands in the pose of departure, holding it for three breaths and hoping fervently that Tahi-kvo would not strike him for trembling. The fire crackled and spat, and Otah almost turned his eyes to the teacher, but it was the old man with his ruined whisper who spoke.

"Go, disowned child, and keep to your study."

Otah turned and walked humbly out of the room. Once he had pulled the thick wooden door closed behind him and walked down the chill hallway toward the common rooms, he gave himself permission to touch his new wound.

The other boys were quiet as he passed through the stone halls of the school, but several times their gazes held him and his new shame. Only the older boys in the black robes of Milah-kvo's disciples laughed at him. Otah took himself to the quarters where all the boys in his cohort slept, removed the ceremonial gown, careful not to touch it with blood, and washed the wound in cold water. The stinging cream for cuts and scrapes was in an earthenware jar beside the water. He took two fingers and slathered the vinegar-smelling ointment onto the open flesh of his ear. Then, not for the first time since he had come to the school, he sat on his spare, hard bunk and wept.

Dai-kvo lifted the porcelain cup with withered fingers, pursed his lips, and blew across the surface of the tea. Otah's footsteps retreated down the hallway, soft as a cat's. Still, Dai-kvo could hear them. Tahi-kvo rested his lacquered rod against the table.

"The boy," Dai-kvo whispered as he looked upon Tahi-kvo's round, careworn face. "What is this one, Tahi? He looks to have some promise."

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"The sixth son of Khai Machi," Tahi-kvo said.

Dai-kvo nodded slowly, his eyes looking back upon the landscape of his memory.

"I remember his brother," Dai-kvo said. "Also promising. What became of him?"

"He was turned away at the end of his training," Tahi-kvo replied. "Most are, Dai-kvo. There are over three hundred of the disowned now. And forty more in the black, under Milah-kvo's wing."

"So many?" Dai-kvo said. "I see so few of them."

"Few are strong enough," Tahi-kvo said. "Or wise enough."

"So. I wonder, when I see these children, how many guess that we are teaching them nothing."

"We teach them many things. How to work, how to speak. Numbers. Letters. Any of them could find a trade once we have released them."

"But nothing of the andat. Nothing of *use*."

"The ones who realize that are already half-way to your door," Tahi-kvo said. "The ones we send are strong and clever enough. The ones we send away. . . ."

"Yes. What of them, Tahi?"

Tahi-kvo shook his head and looked into the fire. His brown eyes looked older, Dai-kvo thought. But he had met Tahi as a rude youth many years before. The age he saw there now, and the cruelty, were seeds he himself had cultivated.

"When they have failed, they take the brand and make their own fates," Tahi said.

"We have taken away their only hope of rejoining their families and the courts of the Khaiem. They are without family, and neither can they control the andat," Dai-kvo said. "We throw these boys away much as their fathers have. What becomes of them, I wonder."

"At the least they can no longer take their families' titles," Tahi said. "They are safe from being killed for their blood. It is the only gift we can give them."

"Disgrace is a thin gift."

Tahi-kvo raised his hands in the pose of resignation before the Gods.

"But we are not Gods, Tahi-kvo," Dai-kvo whispered.

The Dai-kvo left in the morning, and Otah stood in the ranks of boys holding the pose of blessing and farewell. The brass doors that opened only to the Dai-kvo closed behind him, and left the hall in dim winter light. The boys shifted to the pose of waiting. Someone behind Otah took the risk of scratching himself. Otah could hear the shifting sound of fingers against cloth. He did not look behind him.

Tahi-kvo had been spending more time than was customary with Otah's cohort, leading them on occasion, and often sitting quietly over the black-robe set to guide them in their tasks. None of them knew why, though speculations were whispered in the dark of their barracks. Dai-kvo had chosen one of them to go and study the secrets of the andat, to become one of the holy, gain power even higher than the Khaiem, and skip over the black robes of Milah-kvo entirely. Or one of their families had repented sending their child, however minor in the line of succession, to the school, and was in negotiation to forgo the branding and take their disowned son back into the fold.

Otah had listened, but believed none of the stories. They were the fantasies of the frightened and the weak, and he knew that if he clung to one, it would shatter him. Dwelling in the misery of the school without hope be-

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yond survival was the only way to keep his soul from flying apart. He would endure his term and be turned out into the world. Only when he let his dreams loose did he think of learning the secrets of the andat, and that was so rare as to call itself never.

The other cohorts were led out to their studies and duties by Milah-kvo's black-robes, or else the fair-haired, half-smiling teacher himself. Otah enjoyed the days that Milah-kvo led his cohort, but they were few. Today, Ansha-kvo, one of the youngest of the black-robed, led them to a listening room where they sat on stone benches.

Tahi-kvo sat in the back, his lacquered rod still but ready in his hand. A bitter wind blew through thin windows that had never known glass as Ansha-kvo recited the story of the andat who neither fought against the Gods nor with them when first the Gods took the world from the twin dragons of Chaos. His voice was harsh and difficult to listen to, but Otah kept his mind to the task. Tahi-kvo would interrupt suddenly and snap out questions—Why were the andat who refused to fight consigned to a lower hell than the servants of Chaos?—and he would point at one of the boys.

"Because the ones who refused to fight should have fought with the Gods," a thin-faced boy barked. It was the wrong answer.

Because they were cowards, Otah thought, and knew himself correct.

The lacquered stick struck the thin boy on the shoulder, and the black-robed boy smirked and resumed his story.

They stopped for lunch, after which Ansha-kvo led them on a work detail, cleaning the temple. Tahi-kvo did not join them. It was dark and bitterly cold when they finished, and two of the boys who had failed to clean between the stones thoroughly enough were set to scrape ice off the walkways. Otah was not one of these.

He was grateful to crawl into his bunk and pull the thin blanket up to his neck. In the winter, many of the boys slept in their robes against the cold, and Otah was among that number. Despite all this, he preferred the winter. During the warmer times, he would still wake some mornings having forgotten where he was, expecting to see the warm walls of his father's home and hear the voices of his brothers, and the rush of memory was worse than any blow of Tahi-kvo's rod. His father had turned him out, given him to the school for training and branding. Even if he took the robes of the holy and never felt the brand, there would be no reunion with his family. He was not loved or wanted in his home, and he understood that thinking too much about this truth would kill him.

As he drifted toward sleep, Ansha-kvo's harsh voice, murmuring the lesson of the andat who refused to fight, spun through his mind. They were cowards, consigned to the deepest and coldest hell.

When the question came, his eyes flew open. He sat up. The other boys were all sleeping. One, not far from him, was crying in his sleep. It was not an unusual sound. The words still burned in Otah's mind. The coward andat, consigned to hell.

And what keeps them there? his quiet inner voice asked him. *Why do they remain in hell?*

He lay awake for hours, his mind racing.

"Grace in your heart, Tahi," the fair-haired teacher said by way of greeting. A week had passed since Dai-kvo had come, and in that time, the two old friends had not had an opportunity to consult with each other.

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"Clarity in your mind, Milah," Tahi-kvo said. "Sit with me. The fire's warm."

"Fires often are," Milah said, settling onto a cushion. Tahi-kvo laughed sharply, a sound more like a cough than mirth. For a time, they sat in comfortable silence, gazing into the flames.

"How are your boys?" Tahi-kvo asked.

"Much the same. They have seen through the veil and now lead their brothers toward knowledge," Milah-kvo said, but his hands were in a pose of gentle mockery. "What had Dai-kvo to say about yours?"

"Otah humiliated himself before Dai-kvo," Tahi-kvo said. "He took the punishment well. The old man thinks the boy may have promise. And you? What did the old man say of your band?"

"Useless," Milah-kvo said. "Petty tyrants to a man. Any one of them would be eaten by the andat before their heart beat twice."

"Pity," Tahi-kvo said.

"But hardly a surprise," Milah-kvo said.

Tahi-kvo rose. He wore a silken robe with a pattern of the twin dragons of Chaos drowned and defeated by the Gods. From the table, he took a jug and poured two glasses of thick amber liquor. Milah-kvo took the one he was handed.

"I think you should put a watch over Otah," Tahi-kvo said, and Milah-kvo's free hand struck a pose of polite surprise. "I have been seeing the start of it, I think. In a way, I hate to lose him to you."

"No step can be passed over," Milah-kvo said. "If he has the right heart, we will send him on. If not, better that he stay here, and out of harm's way."

Tahi-kvo struck a pose of grudging acknowledgment, then sat and sipped his liquor. Again, they were quiet for a long time. The chair in which Dai-kvo had rested stood empty beside the table. Both of their minds turned around the same subjects—which of the boys might go on, when would the time come for one of them to take the Dai-kvo's mantle and be replaced by a younger of the holy, which of them would have to leave the school to take a place at the apprentice's tables and teach the holy ones the methods of holding and controlling the andat and their powers?

"It was good to see him again," Milah-kvo said.

"He looked so *old,*" Tahi-kvo replied.

A week after Dai-kvo's departure, Otah's preparations were complete. In the dark of midnight, he slipped from his bunk, put on all of his robes, one over another, and walked out from his sleeping cohort for the final time.

The school was unlit and utterly black, but he knew the spaces, and crept to the kitchens with ease. The pantry was not locked—no one would steal food, for fear of being found out and beaten. Otah opened the door and pulled double handfuls of dried fruits and meats into his satchel. There was no call for water—snow still blanketed the ground and Tahi-kvo had shown them how to melt it with the heat of their own bodies' walking without danger of the cold penetrating to their hearts.

Silently, Otah walked down the great aisle where he had held the pose of waiting every day for three years. There, by the main door, he took a pair of net-like snowshoes with thick leather thongs to bind them to his feet. The door, of course, was bolted and locked. He held the shoes under his arm as he angled off to the chilly listening room where Ansha-kvo had recited the story of the coward andat and Tahi-kvo had meted out punishment. The

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thin, stone window, barely wider than a boy turned sideways, looked out over the bare scrub and sparse trees. The world glowed by moonlight.

Otah threw out his satchel and the snowshoes, then pulled himself up to the sill and wriggled out. It was a long drop to the ground, but the snow cushioned him. He tied on the snowshoes, pulled the satchel onto his shoulders, and began the long walk east to the High Road.

The moon had dropped the width of his two gloved hands together before he realized that he was not alone. The careful footsteps that had kept pace with his own dropped out of step behind him, as intentional a provocation as clearing a throat. Otah froze, and then turned.

"Good evening, Otah," Milah-kvo said mildly. "It is a good night for a walk. But cold."

Otah did not speak, but stood before the fair-haired teacher. Milah-kvo breathed deeply, his breath coming from his mouth and nose in a plume solid as a goose feather.

"Very cold," the teacher said. "And far from your bed."

"Yes, Milah-kvo," Otah said, fighting to keep the tremor from his voice.

Milah-kvo stepped forward, his hand resting casually on his own satchel, his snowshoes nearly silent beneath him.

"You disgrace yourself by leaving before your time," Milah-kvo said.

Otah struck the pose of respectful thanks that was required at the end of a lesson, but Milah-kvo waved the stance away.

"Speak to me, boy," he said. "You leave before your time, when there is still hope to redeem yourself. Are you such a coward?"

"It is cowardice that would keep me," Otah said.

"How so?" But there was an edge in Milah-kvo's voice, an interest that Otah found disconcerting in a teacher. It was as if Milah-kvo did not know the answer, and was curious.

"Why else does one stay in hell but fear? What else could keep you there?" Otah replied. "I leave the school because I *can*. I am not afraid to leave."

"You go into the world disgraced," Milah-kvo said. "You will not even have the brand to speak for your worth."

"Yes."

"You will be the lowest of the low. A disgraced child in the world without ally or hope. Without the protection of the brand, your brothers will likely hunt you down and kill you rather than leave a threat to the Khai's title."

"Yes."

"And this does not frighten you?"

"It is my choice," Otah replied, his voice tight. He could see amusement in Milah-kvo's expression at his answer.

"I would give you an alternative," Milah-kvo said, and opened his satchel. Otah stood still as the teacher pulled the dark cloth out of his bag and dropped it on the snow between them. It was a black robe.

Otah took the pose of intellectual query. It was a failure of vocabulary, but Milah-kvo took the meaning behind it.

"The andat are subtle," Milah-kvo said, speaking as if he were addressing a well-loved student. "The weak, those who are unsure of themselves, who take their beliefs only from what they are given—the andat can trick them, and destroy their minds. Those who are willing victims find the andat all too accommodating. That you have chosen action is what the black robes mean."

"They . . . the others . . . they have all left the school?"

Milah-kvo laughed. Even in the cold, it was a warm sound.

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"No. No, you are the first to do that! But all have refused to be held down. Ansha tried to wrestle Tahi-kvo's rod away and beat him with it. Dari asked forbidden questions, endured the punishment, and asked them again until Tahi-kvo had beaten him asleep. He was too raw to wear the black for a month. Each of you has chosen a different route. But if you leave the robe there, then this is all just a night's conversation. Interesting, perhaps, but trivial."

"And if I take it?"

"You will never be turned out of the school so long as you wear the black. You will help to teach the normal boys the lesson you have learned—to stand by your own strength."

Otah blinked. His flight, his renunciation of the school, shifted in his mind. It was a proof of his courage. He had walked away, and thereby proved himself worthy. And now, for the first time, hope began to bloom within him.

"And the andat?" he asked.

"You will begin to learn of them in earnest," Milah-kvo said seriously. "The Dai-kvo has never elevated to the holy one who was not among the black."

Otah looked at the fair-haired teacher, then grinned, stooped, and took up the robe. Milah-kvo laughed and patted Otah's shoulder. It was the first kind act Otah could remember since he had entered the school.

"If we start back now," Milah-kvo said, "we might arrive in time for breakfast."

Otah took the pose of enthusiastic agreement.

"And Otah. This once, I will forgive, but you must not make a habit of stealing food. It upsets the cooks!"

Milah-kvo sat alone in his library. The scrolls and dark, leather-bound tomes filled his shelves. His writing table was clean, worn smooth as still water by decades of polishing and care. By the light of three candles, he reread the message.

There was a knock at the door, and Tahi-kvo stepped into the dim circle of light. His round face spoke of subtle dread.

"It comes from Dai-kvo's chief apprentice," Milah-kvo said, and held out the thick folded paper. Tahi-kvo sat beside him and leaned close to the light. Milah-kvo watched as his old friend's deepest fear—that the old man was dying—was confirmed. Tahi-kvo closed the letter and looked up.

"Once more, he may see the school. Perhaps twice," Milah-kvo said.

"He won't try, will he?" Tahi-kvo said. "There's no reason for him to come. The visits are a formality. We can judge what boys are ready. . . ."

Milah-kvo took a subtle pose that was at once a polite request for clarification and a mourning. Tahi-kvo laughed bitterly.

"You are right, I suppose," Tahi-kvo said. "Still, I would like the world better where he could rest easily and we could carry his burden for him, just a little way."

Milah-kvo's lips twisted in a grim amusement, and he began to speak. The words did not come, though, and instead the dark mirth faded to a nod.

"Otah?" Tahi-kvo asked.

"Perhaps," Milah-kvo allowed. "We might have to call him here for Otah. Not yet, though. The robes haven't been on him for a full season yet. The other black robes have accepted him, but he is still growing used to the power. There's no certainty yet what it will do to him. I would not call Dai-kvo to us before we are sure that the boy will be wise enough as well as brave enough."

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"The old man will come next midwinter, whether there is a boy ready or no," Tahi-kvo said.

"Yes," Milah-kvo said. "Or perhaps he will die tonight. Or perhaps *we* will. No God ever made the world certain."

Tahi-kvo raised his hands in a pose of resignation.

It was a warm night in late spring, and the scent of green penetrated the world. Otah sat on the grass, surrounded by his friends, the black-robed boys of Milah-kvo's elite. Their lesson in stars had ended, and the teacher was indulging them, as he sometimes did, with stories of the andat.

"Her name is Water-Moving-Down," Milah-kvo said. "In the East, she is called Rain. In the South, Seaward. But all these names are one. She is difficult to capture, and more difficult to tame. By controlling her, the holy can bring water to farms in time of drought and swell rivers when an enemy tries to ford them."

"What is her price?" Ansha—no longer Ansha-kvo to Otah—asked. It was a common question, and Otah thought each fate sounded more cruel than the last, though he did not know how this could be true.

"Water-Moving-Down is a fertile spirit, but wild," Milah-kvo said. "One tried to tame her once, and when he failed, he swelled like a woman great with child and split open. His belly was full of black seaweed and ice."

"What was his error, that she took hold of him?" Otah asked.

Milah-kvo smiled and adopted the stance of gentle admonishment.

"That is much more than you are ready to know, Otah. When the time comes, Dai-kvo may answer that question."

Otah, disappointed, still took a pose of correction accepted. Dari slapped at a bug.

"Enough," Milah-kvo said. "The gnats are coming out. It's time we were back."

They rose together, wraith-children in the night, and strolled back to the dark stone buildings of the school. Ansha started running, and Otah joined in the chase until he arrived at the great door with the others, laughing and breathing hard.

"Otah," Enrath, a dark-faced boy, said. "You are taking the youngest cohort tomorrow, ne?"

"Yes," Otah said. "They are turning the soil in the gardens. Why?"

"Tahi-kvo wanted them back and washed early. He said he wanted to take them for lessons."

Otah took an informal pose of understanding and acceptance as they walked into the torch-lit main hall. Another boy ran up behind Otah and pushed him, laughing. Otah grinned and pushed back.

"Do you know why worms travel in the ground?" Milah-kvo asked Otah, his voice loud enough to carry through the hall.

Otah shook his head, smiling at the sly tone in the teacher's voice.

"Worms break up soil, just as the disowned do. They make it easier for plants to find purchase. So you could say that your little ones will be doing worm work tomorrow."

"But worms eat the dirt and shit it out," one of the other boys shouted. "Tahi-kvo told me so!"

Milah-kvo opened his mouth as if to say something, but then only laughed. All the black-robed boys laughed with him, including Otah.

The black-robed slept in smaller, closer rooms, each with four bunks.

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Otah, as the youngest of his room, had the duty of tending the fire that warmed them through the night. Though the thaw had come, the nights were still bitterly cold. In the morning, Milah-kvo himself would come and pound on each door, rousing them even before the false dawn. They washed in communal tubs and ate at a huge, dark, wooden table with Tahi-kvo at one end and Milah-kvo at the other. Otah still felt uncomfortable under the round-faced teacher's gaze, however friendly his eyes had become.

The black-robed boys took turns overseeing the cohorts of the disowned—the ranks of which they were no longer a part. Otah, when he took his plate to wash it, was already planning the day ahead. If Tahi-kvo was taking the youngest cohort after mid-day, Otah would be able to attend Milah-kvo's daily lessons. The prospect pleased him. It was a rare and unexpected treat.

Just after dawn, Otah strode into the long, cold main hall where the cohorts, dressed in their tattered grey, stood in the pose of waiting. Otah paced before the first cohort where the youngest boys shivered. He was silent for a long moment, his eyes searching out any in the improper stance or who were scratching.

"Today, we turn the soil of the gardens," Otah barked. Some of the younger boys flinched. "Tahi-kvo demands the task be completed and all of you cleaned and prepared by mid-day. Follow!"

Otah led the way out to the gardens, the disowned following along behind him. Twice, he turned back to be sure they were in the proper order, walking with proper stance. When one, Navi, eighth son of Khai Ledo, was out of step, Otah slapped him smartly across the face. The boy corrected his stride.

The gardens were brown and bare. Sharp twigs—the winter corpses of last year's crop—littered the ground. Otah led the disowned to a low tool shed where the youngest brushed webs off the shovels and spades.

"We will begin on the north end," Otah said, and the disowned fell into place. The line was ragged, some boys taller than others and spaced unevenly, leaving gaps like milk teeth. Otah sighed and walked down the line, correcting each child on where to stand and how to hold his shovel. When they were well-spaced, Otah gave the order to begin, and stood back to watch, his arms folded.

The oldest of this cohort had not seen eight summers, and their thin arms pressed weakly against the ground. The smell of fresh-turned earth, rich and deep, came only slowly. Otah paced behind them, his boots barely sinking into the turned earth.

"Deeper," Otah barked. "*Turn* the soil, don't scrape it! *Worms* could do better than this!"

The boys didn't speak, didn't look up. Otah shook his head and spat.

The sun had risen a hand and a half, and they had only turned one plot of soil. The day was warming, and some of the boys had shed their top robes. Otah scowled and paced as they began the second plot. There were still three more to go, and the time was running short.

"Tahi-kvo wants this done by mid-day!" Otah shouted. "I will see you all branded if he is disappointed!"

They struggled to hurry, but it grew clear to Otah that they would not finish in time. After instructing them to hold to their task, he stalked back into the school and found Tahi-kvo. The round-faced teacher was pacing with an older cohort that he had set to cleaning the kitchen. The lacquered rod whirred impatiently.

"Tahi-kvo," Otah said, taking the pose of humility before the teacher.

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"Otah," Tahi-kvo said, and then was silent.

"The youngest cohort will not be able to finish turning the garden by midday, Tahi-kvo. I apologize, but they are slow and stupid."

Tahi-kvo considered Otah's words, and then nodded curtly.

"Take them back out after they have eaten," Tahi-kvo said. "Their lesson will wait for another day."

Otah struck the pose of obedience, then turned and walked out to the garden. The disowned went silent as he approached. Their work, he saw, had slowed in his absence. Otah felt his face go hard as stone.

"You have cost me time with Milah-kvo," Otah said, his voice low but strong enough to carry to all the children in the cohort. Guilty as dogs, their eyes would not meet his.

"You!" he said, pointing to a fat boy with a spade in his hand. "Give me that!"

The boy's eyes went wide, but he held out the spade. Otah snatched it from him and pressed the blade into the fresh-turned soil. The blade sank only half-way in. Otah's shoulders curled in rage. The boy took the pose of apology, but Otah did not respond with acceptance.

"You are meant to turn the soil. *Turn* it. Are you a fool? Do you understand?" Otah demanded. He could feel the blood in his face.

"I am sorry, Otah-kvo . . ."

"If you can't do this as a man, do it as a worm. Get on your knees."

The boy blinked, uncomprehending.

"Get on your knees!" Otah shouted, leaning into the boy's face. Tears welled up, but the boy knelt. Otah stooped over him and grabbed a clod of dirt. "Eat it!"

The boy took the clod in his hand and looked up at Otah. A cold breeze pulled at his sleeve. Weeping, the boy put the clod to his mouth. The others in the cohort stood in a circle around the pair. The boy worked his jaw, mud on his lips.

"All of it!" Otah demanded.

The boy took another bite and then crumpled over, sobbing. Otah coughed in disgust and turned to the others.

"Get back to work!"

They did not object, but scampered back into line and started turning soil with the vigor of fear. The mud-lipped boy remained on the ground, weeping over his hands. Otah took the spade to him and thrust the blade into the ground beside him.

"You were waiting for something?" Otah asked quietly.

The boy murmured something, but Otah couldn't make it out.

"What did you say?"

"My hands," the boy forced out through his sobs. "My hands hurt. I tried to dig deeper, but it hurt so much. . . ."

He turned his hands palm up to Otah, and the bleeding blisters were like looking over a precipice. Otah felt suddenly dizzy. The boy looked up into his face, weeping, and the low keening was a sound Otah recognized, though he had never heard it before, a sound he had longed to make through seasons of sleeping in the cold, hoping not to dream of his mother. It was the same tune he had heard in his old cohort, a child crying in his sleep.

The black robes suddenly felt awkward, and the memory of a thousand humiliations sang in Otah's mind the way a crystal glass might ring with the sound of a singer's note.

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He knelt beside the weeping boy, words rushing to his lips and there failing him. The others in the cohort stood silent.

"You called for me?" Tahi-kvo said.

Milah-kvo, leaning against the sill of the tower window, motioned out toward the gardens. Tahi-kvo strode across the room and looked. In a half-turned plot, one of the black robes was cradling one of the disowned in his arms while the others in the cohort looked on in silence. Tahi-kvo blinked.

"How long?"

"They were like that before I sent for you," Milah-kvo said. "I don't know how long they were there before I noticed."

"Otah?"

Milah-kvo nodded.

"We can't let this go on," Tahi-kvo said.

"True," Milah-kvo said. "But I wanted you to see it."

In grim silence, the old friends walked down the tower stairs, through the kitchen, and out to the gardens. The disowned turned away and pretended to work as soon as they saw the teachers approaching. Otah and the boy remained where they were.

"Otah!" Tahi-kvo barked. The black-robed boy looked up. His eyes were red and watery.

"You're ill," Milah-kvo said, his voice calming and warm. "You should go in and rest. We will take care of the garden."

Hesitantly, Otah took the pose of submission, stood, and walked away. Milah-kvo's eyes met his old friend's, and Tahi-kvo motioned that he would stay. Milah-kvo walked with his black-robed disciple.

In the quarters of the elite, Milah-kvo watched Otah clean his face and hands. The boy's shoulders were bowed. None of the other black robes joined them, though Milah-kvo knew there were some about. The story was no doubt already traveling. Otah was very fragile now, and this transition was delicate. Milah-kvo put a gentle hand on the boy's shoulder.

There was still a chance that it was not what it seemed, that Otah was not ready, despite the signs. And Milah would not call for the Dai-kvo unless he was sure.

"You did that boy no favor today," Milah-kvo said sternly. "Comforting him may make *you* feel well, but it cannot help him to come to himself."

"Yes, Milah-kvo," Otah said.

"If he were as strong or wise as you, he would be in the black already," said Milah-kvo.

"Yes, Milah-kvo," Otah said.

"I know it can be difficult, being a teacher. It requires a hard compassion. But if we are not strong, they will never turn away from their own weakness. When you offered him comfort, you lessened his only chance of leaving here without disgrace."

"Have any been expelled from among the black-robed?"

"None. Why do you ask?"

"I have failed," Otah said, then paused for a long moment. "I am not strong enough to teach these lessons, Milah-kvo."

Milah-kvo looked away, his lips slightly pursed. He imagined the frail hands of his old teacher, the cost that calling for him would exact on the ancient flesh. When he spoke, he could not keep the weight of his decision entirely from his voice.

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"You are relieved of your duties for three weeks, Otah," he said, "while we send for the Dai-kvo."

"What did you do, Otah?" the voice whispered sleepily.

Otah turned in his bunk. The last coals of the fire glowed too dull to see, but he knew the voice well.

"I made a mistake, Ansha," he said. "Only that."

"They say the Dai-kvo is coming."

"It may have been a very grave mistake," Otah said. It may be the first time the black robes have been taken away, he thought. He was the first to have come this far and failed this badly.

"You must fight, Otah," Ansha said. "Show them you are strong, and they will forgive you."

"This from the one who beat Tahi-kvo with his own rod," Otah said, and Ansha laughed.

"I never got the rod out of his hand," Ansha said in the darkness. "The attempt was enough."

Otah remembered the moonlight and the snowfield, the weight of stolen food against his hip. Milah-kvo had been wrong. His flight had not been a show of strength after all, but only a presentiment of his disgrace.

Ansha grew silent.

Otah waited until the last of the glow was gone from the coals. Then waited longer, until he was certain the others were deeply asleep.

In darkness, he pulled himself out of his bunk and slid out into the corridor. It was not a far walk to the huge, chilly rooms where the youngest cohort slept. Otah walked among the tiny sleeping forms. Their bodies were so small, and the blankets so thin! He had not yet worn the black for a full year, and already he had forgotten so much.

The boy he sought was at the farthest end, the last before the chilled stone of the wall. Gently, Otah put a hand over the boy's mouth, prepared to stifle him should he call out. But the boy merely blinked awake. Otah watched recognition bloom in the child's eyes.

"Your hands," Otah said. "They are healing?"

The boy nodded.

"Good. Be quiet. We mustn't wake the others."

Otah drew his hand away. Instantly, the boy took a pose of profound apology.

"Otah-kvo," he said, "I have dishonored you and the school. I . . ."

Otah took the boy's hand and folded his fingers gently closed.

"The failure was mine," Otah whispered firmly. "The responsibility is mine, and the price mine to pay."

"I should have worked harder," the boy said.

"It would have gained you nothing," Otah said. "Nothing."

The students stood in the main hall, all in the pose of greeting, as the bronze doors opened again. All knew that this was not the normal time for Dai-kvo to visit. Otah, in the ranks of the black robes, was sure there were rumors to explain this. No doubt every boy in the school hoped that he would be elevated to the Dai-kvo's apprentice or released by some miracle back to the families that had left them in the stone hell. For himself, the opening of the doors was a stab in his heart.

The old man walked more slowly than Otah remembered, and with less certainty. After the ceremonial greeting, Dai-kvo blessed them all in his whisper-

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ing, ruined voice, and the teachers followed him back to their private rooms.

Otah filed out with Milah-kvo's other disciples and returned to his room, and waited for the call he knew would come.

"Otah," Tahi-kvo said from the doorway, startling him. "Get tea, would you? The Dai-kvo wishes it."

"The ceremonial robe . . ." Otah began.

"Not required. The tea."

Otah held the pose of submission, but his heart filled with dread. It was time.

The Dai-kvo sat in the chair, his fingers steepled before his mouth. Milah-kvo thought that his skin seemed thinner than it had at midwinter, his eyelids heavier.

"How are things back in the world?" Milah-kvo asked. "Are the apprentices well?"

"Quite," Dai-kvo whispered. "And here? How fares the school?"

"Well," Milah-kvo said.

"So? I wonder, some nights," Dai-kvo replied, but did not go on. Tahi-kvo returned and took the pose of obedience and reverence before sitting across from his old master.

"The boy is coming," Tahi-kvo said.

Dai-kvo's hand struck a pose of acknowledgment but nothing more. The teachers shot concerned looks at each other, but did not speak. It seemed much too long before the quiet knock came at the door.

Otah carried the tray with three cups of tea to the table, placed it before the old master, and took the pose of greeting.

"I am honored by your presence, most high Dai-kvo," Otah said perfectly.

The old man opened his eyes and nodded, but did not tell him to keep to his studies. Instead, he gestured to the empty seat that Milah-kvo usually took. Otah blinked and looked at the fair-haired teacher. Milah-kvo nodded, and Otah sat.

"What do you know of the andat?" the old man asked.

"Little," Otah answered. "They are spirits and thoughts, and it takes much wisdom to control them. But they have great power."

"Have they taught you nothing of them here?" Dai-kvo asked.

"Nothing of substance," Otah replied. "We were told that such knowledge would be too dangerous to us." Milah-kvo repressed a smile. Tahi-kvo moved forward, shadow silent, and poured a cup of tea for the old man.

"True," Dai-kvo agreed. "This is true. You were never taught. Only tested."

The old man took the cup from Tahi-kvo and blew on the tea to cool it. Otah looked at the ground.

"Do you recall the conversation we had in the snow?" Milah-kvo asked. "It was the night you took the black."

"Yes," Otah said without raising his head. "You said the weak cannot control the andat."

"Neither can the cruel be allowed to," Dai-kvo said. "Neither weak nor cruel. It is a rare combination, Otah. It is easy to fail."

Otah took a pose of contrition.

"I am sorry, most high Dai-kvo, that I have been a poor teacher to the disowned. . . ."

The old man waved impatiently, and Otah broke off.

"Listen to my words, not your fears. I have not pulled myself half across

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the world to punish you, boy. You refused your weakness *and* you refused the cruelty of power. It happens less often now than it once did."

Dai-kvo leaned forward and took the boy's hand in his own, looking deep into Otah's surprised eyes.

"You have shown yourself worthy. Worthy!" Dai-kvo said. "I would take you, Otah, son of Khai Machi, as my apprentice. You shall shed your disgrace and learn what secrets I know. Join the ranks of the holy."

Otah stared at the old man, and Milah-kvo could not read the boy's thoughts in his face. For a long time Otah was silent, then, slowly, he pulled his hand out of the Dai-kvo's grasp.

"Have you nothing to say, Otah?" Tahi-kvo asked.

When the boy spoke, he spoke to the Dai-kvo alone.

"I had not thought of these things as lessons before, but I believe I see now what you meant by them," Otah said. "This place is the way it is for a reason?"

"Yes," the old man said. "The weak never leave the ranks of the disowned, and the cruel remain in the black robes, ignorant of the andat."

"Then this is not my failure."

"It is your *honor*," Dai-kvo said.

"My honor? This?"

"You sound surprised, little one," Dai-kvo said. "You may not see the wisdom of our practices, but it will prove itself in time to be the best course. You will see the wisdom in what we do."

For a moment, Milah thought the boy was going to laugh, but a somber expression took him, and he stuck a pose of gratitude to one's teacher. There was something odd, though, in the cant of his wrists, some subtlety of emotion that Milah could not fathom.

"If this is my honor, then I truly understand, most high Dai-kvo," Otah said.

"Do you, child?" Dai-kvo asked, and there was a tone in his voice that surprised Milah. It sounded almost of hope.

The boy nodded slowly, but his expression was terribly grave. When he spoke, his voice was flat.

"You say that Tahi-kvo has tested my courage and Milah-kvo my kindness, most high Dai-kvo. But the lessons I have taken were not the ones you intended."

The old man blinked, confused by the boy's words. The boy looked straight into Dai-kvo's eyes, and he did not seem afraid of them. Tahi-kvo shot a concerned glance at Milah-kvo. Dai-kvo was silent, and the boy went on.

"This place is of your design, and it is only right that you know what I have learned at your hand. From Tahi-kvo, I learned that I must choose my own way, and from Milah-kvo that I should not have returned. There is no honor in a lesson half-learned.

"And that, Dai-kvo, is all I have ever learned inside these walls."

Otah stood silently, showed his hands in the pose of departure, and turned away. Milah-kvo stepped forward, his hand out toward the boy.

"Otah!" Tahi-kvo barked. "Return to your seat!"

The boy did not turn back, and the door closed behind him gently but with a final air. Milah-kvo crossed his arms and stared at the door as if it were a marvel. The fire in the grate shifted, burned-out wood collapsing under the weight of ashes.

"Milah," Tahi whispered.

Milah-kvo turned, and Tahi motioned to the Dai-kvo. The old man sat, barely breathing. His hands held a pose of exquisite regret. ○

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Illustration by June Levine

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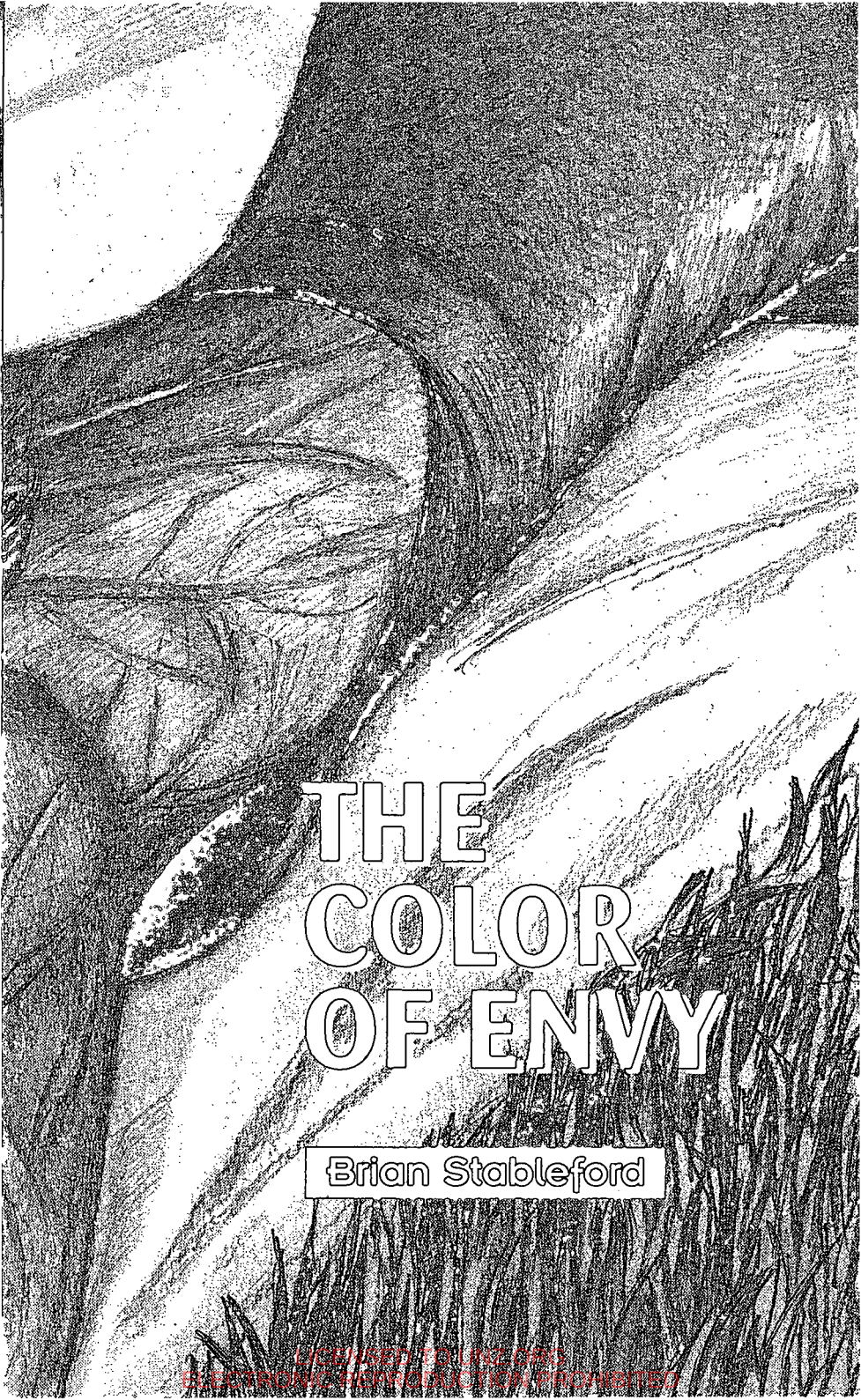

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Brian Stableford's non-fiction includes *Beyond the Genome* (July 2000), the second in a continuing series of pamphlets on new developments in medical biotechnology published by the Wellcome Trust. In October 2000, he received the Dracula Society's "Children of the Night Award" for best novel of 1999, for his translation of Paul Feval's *Vampire City* (Sarob Press). He is currently employed as a lecturer in creative writing at King Alfred's College, Winchester, teaching on an MA course in "Writing for Children."

"And why do you want to take part in this particular program, Miss Eliot?" asked Mrs. Parkinson, the lady from the Ethics Committee. It was the sort of question that people from Ethics Committees always asked, although Tess couldn't see that her motivation had anything to do with the moral justifiability of the experiment. So what if her interest *was* in the money that was on offer? What difference did it make?

She decided to lie anyway, carefully marshaling her armory of clichés. "I think it's something of real benefit," she said. "I know that human somatic engineering is considered to be rather risky, because of all the unknowns involved, but it's an important new method of tackling all kinds of medical problems. Generally speaking, it's the way forward—the cutting edge of progress. I suppose this particular experiment seems a little weird, but I've read the prospectus carefully and I think there's a lot to be learned from it. As Dr. Coghlan says, we've become so hung up on pill-popping that we don't realize how important the skin is to our general health, or the subtle opportunities it offers for improvement of the human condition."

Tess saw Dr. Coghlan grinning contentedly as his words were repeated in the tone of innocent credulity she had cultivated for such occasions as this. Dr. Hubbard's smile was slightly ironic, but it was a smile of approval nevertheless, nicely lit by the sunlight streaming through the ample windows of the hospital's plush Committee Room.

Tess had never volunteered for actual somatic engineering before, although she had rented out portions of her skin for several contact tests, and still had a couple of scars to prove it. She'd popped her fair share of pills and had become more intimately acquainted with powderject systems than she'd ever wanted to, but the main problem with those kinds of gigs was that she usually had to report to the labs on a daily basis for tests. Coghlan and Hubbard's experiment wasn't just better paid; it only called for once-weekly monitoring. Given that she was supposed to be writing her dissertation, Tess didn't want to be overcommitted to any kind of routine drudgery.

"You've done rather a lot of this kind of work during the last four years," Mrs. Parkinson observed, putting on a show of being worried that Tess might be becoming a guinea-pig junkie ripe for full-blown Münchhausen's Syndrome. Tess was an old enough hand by now to know that a good guinea pig must never seem guilty of self-neglect, let alone self-abuse.

"Tuition fees have to be paid," Tess observed. A little bit of honesty couldn't hurt, provided that she used it as the prelude to something more grandiose.

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"I couldn't have stayed on to do the MA if the volunteer work as an undergrad hadn't demonstrated that there was a decent and bearable way to pay for it. I suppose I could have done bar-work or lap-dancing, but I like myself too much to put myself through it. I figure that if I'm going to end up tired and nauseous, I'd rather do it for some higher cause than the gluttony and lust of middle-aged men."

Even the lady from the Ethics Committee smiled at that one. Not all feminists were ethicists, but all ethicists were feminists. "Won't your boyfriend object to the discoloration?" she asked. It was the ultimate trick question; good guinea pigs were single, free of dependents and unlikely to drop out because of intimate peer pressure, but they were also normal, average, and representative.

"I don't have a steady boyfriend at present," Tess told her. "The MA's only a one-year course and it's important that I do well. The job market's very competitive. I find that it's best, for the time being, to go out with a crowd—to enjoy myself without anything getting too intense. I expect I'll get teased, but it isn't going to cause any problems."

Mrs. Parkinson nodded approvingly. If she suspected that Tess was bullshitting, she certainly wasn't going to say so. At the end of the day, she had as much interest as Drs. Coghlan and Hubbard in making up the sample number. "Okay," the ethicist said. "I don't see any problem here. Is Miss Eliot acceptable to you, doctors?"

Tess was, of course, acceptable to the doctors. Researchers in genetic engineering might not think of themselves that way, but they were mostly nerdy middle-aged males, and Coghlan and Hubbard were no exception to that generalization. Twenty-one-year-old females were their favorite kind of experimental subject, even when they were awkwardly tall and not very pretty.

Sometimes, Tess reflected, guinea-pigging wasn't all *that* much different from lap-dancing—but even when you set aside the bullshit, it really did serve a higher cause. She knew that she might have to get used to being the butt of an awful lot of jokes while her arms and legs were green, but she figured that it would be worth it, in more ways than one. As well as clearing the last vestiges of her student loan, the pay off would actually leave her in credit, and the experiment itself would be interesting. There was bound to be a certain *cachet* in being one of the first human beings ever to be equipped with chloroplasts. If things went well—or even if they went badly in an interesting kind of way—she might be able to dine out on the story for the rest of her life.

Because Tess's degree was in Media Studies, Drs. Coghlan and Hubbard took it for granted that she wouldn't be able to understand the finer details of what they planned to do to her, but the Principle of Informed Consent required them to make the best effort they could. They were still making the effort when they got things under way in the basement lab, while Tess lay on an operating table under the merciless glare of the striplights.

"The artificial chloroplasts are different in several significant ways from the ones that occur naturally in the leaves of plants," Dr. Coghlan told her, as he prepared to slap the first generous helpings of the pale green goo onto her more-than-ample arms and thighs. "The ones in plants are adapted to function within a specific biochemical context, and animal cells don't come equipped with the same kind of support structures. We've had to add a couple of extra twists to ensure that the carbohydrates synthesized by our ba-

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bies can actually be used within the cells. There's a slim possibility that the add-ons won't work as well in vivo as they did in vitro, thus resulting in an unexpected build-up, but we don't think the surplus carbohydrates would do any harm if that happened. There are several kinds of protozoans that can function either as proto-plants or proto-animals, depending on the presence or absence of chloroplasts, *Euglena* being the best-known example, and we suspect that human cells are just as clever. The preliminary tissue-cultures suggest that skin cells are more adaptable than nature usually requires them to be."

"The one thing we can't expect, of course," Dr. Hubbard put in, as he hurriedly pulled on his own sterile gloves, determined not to miss out on the thigh-slapping fun, "is that the chloroplasts will be able to play a significant nutritive role. You'll probably get sick and tired of people asking you whether you can give up eating now that you can fix solar energy just like a tree, but we want you to carry on eating normally. We don't expect any significant diminution of your appetite. Humans are much more active than trees, you see. They need a great deal more energy, not just for locomotion but to maintain a stable internal temperature. The point of our experiment isn't to relieve you of the necessity to eat, even partially."

The goo felt cold as the two experimenters spread it over Tess's limbs, but it was a warm day and the coldness was refreshing, almost like taking a dip in a swimming pool. The texture was more discomfiting; although the carrier was the color of mushy peas, it felt more like treacle.

"I understand that," Tess assured Dr. Hubbard. "I've read the proposal. The technical stuff is mostly Greek to me, of course, but I get the general drift. The skin already plays a slight nutritional role, not in terms of basic carbohydrate building-blocks, but in stimulating the synthesis of the odd vitamin or two. Ever since the backlash against the skin-cancer scare of the 1990s, people have been hunting for all kinds of evidence that exposure to sun can actually do us *good* by helping the skin to repair itself, reducing wrinkling, and so on. What you're trying to do, basically, is to give those processes of repair and self-improvement an extra boost." *Purely in the interests of good health, of course,* she added, silently. *Perish the thought that either of you might be looking to bail out of biomedicine by selling out to the cosmetics industry.*

"That's right," said Dr. Coghlan, enthusiastically. "We're hoping the weather holds throughout the eight-week run, so that you can spend as much time in a bikini as you can—while keeping up your academic work, of course. Your skin is renewing itself continuously as the top layer of epidermal cells dies and the cells are sloughed, so the chloroplasts will work their way out of your system naturally. If the preliminary experiment *is* a success, we might actually have a product on the market before you're thirty—long before *you* need to worry about wrinkles."

The researcher's reference to bikinis was entirely gratuitous; Tess's belly—like her face—would remain off-white throughout, and she would be able to expose the treated surfaces perfectly adequately while wearing shorts and a T-shirt. At present, she was wearing a modest one-piece bathing suit, and she felt a trifle over-conspicuous even in that.

"Well," Tess said, deciding as she turned from a supine position to lie prone that the ignominy of her situation licensed a little cynical humor, "I guess I won't qualify for the *real* test. By the time I have to make the big decision, the PR people will either have won the war or lost it."

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"How do you mean?" said Dr. Hubbard, who tended to be somewhat less articulate when he was forced to abandon his prepared scripts. "What *real test?*"

"The test that will determine whether middle-aged women will be prepared to turn their faces green if that's the price they have to pay for not getting wrinkly. I can imagine the slogans and headlines already, can't you? 'BETTER GREEN THAN HAS-BEEN. GREEN IS THE COLOR OF ENVY. A FINAL FAREWELL TO FRAIL FAWN FLESH.'"

"Now, Tess," said Dr. Coghlan, censoriously, "if you've read the proposal, you know there's *far* more at stake here than mere matters of vanity. Lie still now—we have to give the vector virus-coats a chance to get the chloroplasts across the cell membrane. I see from your record that you're familiar with the uses of DMSO as well as powderjects, but this is more complicated. If you'll forgive the mildly pornographic comparison, it's more like sperm cells fertilizing ova. Perfectly harmless, of course—we'll scrub you down with sterilizing fluid in half an hour or so, when the chloroplasts have had a chance to sink in."

"No problem," said Tess. "You couldn't possibly let me have a pair of those gloves, could you? This stuff is too sticky to stay exactly where it's put, and it would probably help to cut down on the silly jokes if I didn't actually have green fingers when I walk out of here."

"Of course," said Dr. Hubbard. "We should have thought of that. Just keep as still as possible while I find one of the lab assistants to put them on for you."

"You'd better make sure you keep your own hands away from your faces," Tess advised the experimenters, more out of mischief than altruism. "You could end up with some embarrassing spots."

Fortunately, Tess's skin didn't end up the same virulent shade as the goo from which the artificial chloroplasts had been absorbed. The transferred greenness was distinct enough, but it was a pleasant pastel shade. *I'm not as green as I'm cabbage-looking,* Tess thought, remembering something her maternal grandmother used to say. Her grandmother's maiden name had been Green, and she'd taken a certain amount of teasing because of it when she was a child. What she'd have said about Tess's latest project could only be imagined, because Tess had not the slightest intention of telling any of her relatives exactly how she was paying her way through university.

For the first few days, there were no other symptoms to accompany the change of color. It was as if she'd been given a light coat of intangible paint. She presumed that Drs. Coghlan and Hubbard would be able to detect some changes at the physiological level when she returned to the hospital on the following Monday for her weekly checkup, but the early indications were that this would be the easiest money Tess had ever earned.

At first, she was a little wary about sitting outdoors in the full glare of the summer sun, and not just because she was bound to attract attention, but when no itches developed, she grew bolder. She had no more classes to attend, and the research for her dissertation on "The Image of Biotechnology in Popular Journalism" involved several routine tasks—reading tabloid newspapers, for example—that could as easily be carried out on the lawns outside the Hall of Residence as anywhere else.

Oddly enough, her neighbors didn't hurl nearly as many feeble jokes in her direction as she'd expected. In fact, the almost-unanimous reaction of

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people who knew her name was alarm bordering on horror. The most oft-repeated comment was the distinctly humorless "It's not *catching,* is it?"

"You're completely mad, you know," said Sheila, the English Lit. Ph.D. student who lived in the room next door and qualified as Tess's only real friend. "I thought the business with the blisters had taught you a lesson. Suppose that stuff doesn't come off—you could be stuck like that forever."

"Only if the wind changes," Tess told her—but the irony was lost.

"It's *dangerous,* Tess," Sheila insisted. "It's *genetic engineering,* for God's sake!"

"I know all about the risks," Tess assured her. "Once you get past the yuck factor, it's no big deal."

"Well, it's no wonder you can't get a boyfriend. You've no chance now. Who'd want to be hugged by green arms?"

That, of course, was totally uncalled for. "The reason I don't have a boyfriend," Tess retorted frostily, "is that they're a waste of time and space even when they don't expect you to do their washing for them. If I did have one, he wouldn't be in the least put off by the fact that my arms and legs will be a discreet shade of green for a couple of months."

"You have no idea what it's doing to you," Sheila insisted. "While normal people are still trying to keep GM soya and peanut oil out of the supermarkets, you're actually letting those Frankensteins modify *you!* Crazy."

"I'm not going to metamorphose into a triffid," Tess assured her, figuring that she might as well supply the jokes if no one else would. "I don't even feel any insidious urge to join Greenpeace, or pose for Tretchikoff."

"So how *do* you feel?" the ever-curious Sheila wanted to know—and when she didn't get the answer she was looking for on Wednesday, she asked again on Thursday, and yet again on Friday—by which time the pedestrian traffic on the path through the lawns seemed to Tess's slightly anxious eye to have increased considerably. She told herself sternly that it was ridiculous to suspect that people who had no real reason for walking past the Hall were taking detours so that they could catch a discreet glimpse of the notorious girl with green limbs, but she couldn't quite convince herself. Having green arms and legs for a couple of months had seemed like a minor inconvenience when contemplated in the abstract, even when the researchers had told her that she had to give the treated surfaces as much exposure to the sun as she could contrive, but Sheila's comments only served to emphasize her own growing sense of embarrassment and unease.

She had to fight back, of course. The last thing she wanted to do was let anyone else see her discomfort or share her distress. The first couple of times, Tess answered Sheila's question as to how she felt by simply saying: "Fine." On Friday, however, she made it: "Better than fine. Pretty good, in fact."

"I don't believe you," was Sheila's blunt retort. "You can't tell me that you really *are* getting energy out of the sunlight!"

"But I *am,*" Tess insisted. "That's the whole point of the experiment. The chloroplasts are producing glucose and half a dozen other beneficial compounds, and the glucose is being metabolized right there in my skin cells. I really do feel a sort of *healthy glow.*"

"Green glows aren't healthy," Sheila said unhesitatingly. The confident generalization was presumably based on a more careful study of bad science fiction movies than Tess, even as a Media Studies student, had ever felt compelled to make.

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"It's not a glow in the sense that you *see* it," Tess said, with a sigh. "*Glow,* in this context, is a kind of warm feeling. Well, not exactly *warm,* more. . . ," She was forced to tail off at this point, because she hadn't thought the story through any further. It occurred to her, too, that while she'd been so busy worrying about what she must look like, she hadn't actually tried to interrogate her real feelings. It hadn't seemed necessary, until the challenge was formally issued—but now that it had been issued, she felt obliged to meet it squarely. "I *do* feel that my skin is enjoying its exposure to the sun," she went on, after a pause, trying not to sound too surprised, "but that's not all. There's a certain almost erogenous superficial excitement, but there's also something deeper, something that touches my fundamental being-in-the-world."

"You Media Studies people are *so* full of existentialist and deconstructionist bullshit," was Sheila's inevitable response. "You'll be telling me next that you feel a new kinship with the trees and the grass—that you'd only have to roll naked on the lawn to have multiple orgasms. *Almost erogenous superficial excitement!* You don't listen to yourself, do you?"

The truth of the matter, however, was that Tess had only just begun to listen to herself, and to wonder how accurately she was describing her sensations. She wasn't sure that she was making sense, but she was trying. Was it possible, she wondered, that her green skin really *had* become more sensitive to trivial sensations—not just external sensations like the pressure of the wind but internal sensations too? Was it possible that she was more aware of *herself* in consequence—or, if not more aware, at least differently aware?

Tess was still thinking about these possibilities when the sun went down and she returned to her room. She was not normally one for looking at herself in a mirror, but she did so now, wondering if her undiscolored face had changed somehow in response to what the chloroplasts had done for her inner being.

"It's bullshit," she murmured. "It's all in the mind." But *what* was in her mind, exactly? And how had it got there?

She decided, on due consideration, that her new self-awareness wasn't at all unpleasant—nothing like an itch or the "restless legs" she sometimes got if she had to take antihistamines for hay fever—even though the mere fact of it was slightly worrying. On the other hand, what Sheila had said about rolling around on the lawn didn't seem quite as absurd as she had intended. Tess *did* feel a certain inchoate desire for contact with other living things, so that her temporarily-green flesh might be touched by its natural counterparts. It wasn't a sexual desire—not, at least, in the familiar terms of human sexuality—but it was a temptation of sorts, which might even qualify as an appetite.

Maybe I am crazy! Tess thought. *I'm certainly going to sound crazy if I lay this on Cocky and Hub—unless, of course, they've already heard it from the other boys and girls.*

For a moment or two, she wondered whether it would be too heinous a crime to break protocol and confer with the other subjects. She didn't know any of their names, of course, but they presumably lived within a few miles of the hospital, and they could hardly make themselves inconspicuous. She decided against it, though; quite apart from risking her paycheck, it would be wrong to prejudice the experimental findings.

Better wait and see, she thought. *It's probably just my imagination playing up.*

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Tess didn't dare say too much to Drs. Coghlan and Hubbard, in case she came across as the kind of person who could develop all manner of imaginary symptoms just by reading a medical textbook, but she did drop heavy hints to the effect that she was feeling different. She knew that she couldn't have been the only subject to do that, because the first thing Coghlan asked her was whether she'd talked to any of the others. "Of course not," she replied, virtuously. "I know the rules. What have they said?"

"If you know the rules," Dr. Coghlan riposted, "you'll know why I can't tell you that. I suppose you've considered the possibility that these strange sensations are purely psychosomatic?"

"Of course I have," Tess told him. "I'm an old hand at guinea-pigging, remember. I know all about the hazards of suggestibility and the methodological curse of the placebo effect. Isn't there a danger of going to the opposite extreme, though? It *might* be real."

"It *is* possible that there's some extra stimulation of the nerve endings," Dr. Hubbard put in, pensively. He was talking to his colleague rather than Tess, and he shouldn't have been doing it in front of her in case it put ideas into her head, but Tess was too interested to let it pass.

"I thought of that," she said. "When I told one of my friends that it was a sort of glow, I had to start asking myself what I meant by that. I wondered whether I might simply be feeling the warmth of the sunlight more intensely, but I don't think that's it. I know that what we lump together as the single sense of touch actually involves several different types of nerve receptors—pressure, pain, heat, and so on—but I don't think it's any of those kinds of stimuli. It's more diffuse, more rarefied. You might think this is silly, but the fact that plants don't have nervous systems doesn't mean that they're *insensitive,* does it? They react to their environment—and most of all, they react to *light.* Their chloroplasts must be involved in whatever kind of chain reaction is going on. You said yourselves that protozoan cells can accommodate chloroplasts or not, and that human skin cells are more adaptable than might be expected. I can't help wondering whether your artificial chloroplasts have awakened some kind of sensory mechanism that's been lying dormant in *all* animal cells for billions of years."

Dr. Coghlan stared at her, wearing a stern frown. "It's not good for experimental subjects to do so much *thinking,*" he said. "The principle of informed consent may be ethically necessary, but it does carry methodological risks. The process of observation always affects the properties of whatever's being observed, but we have to try to keep that kind of effect to a minimum."

"Easy enough with tissue-cultures," Tess told him, offended by his lack of appreciation. "When you use real human subjects, you get a real human response. Isn't that the point?"

"The point Dr. Coghlan is trying to make," Dr. Hubbard put in, soothingly, "is that it might be better if you were to try to make an objective record of your sensations rather than trying so hard to interpret them theoretically."

"There's no such thing as an *objective record of sensations,*" Tess came back. "Sensations *have* to be interpreted, whether you use theoretical jargon or not. If we were used to the kinds of sensations I'm now experiencing, the language would already be equipped with commonplace descriptive terms, but we aren't and it isn't, so I'm doing my best to make up for the lack, okay?"

"Okay," said Dr. Hubbard, hurriedly. "We do appreciate it—but it's not exactly what we're looking for. Our interest is primarily physiological."

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"Well," said Tess, "I dare say that I can leave measuring the wrinkles and tracking the carbohydrate levels to you. If there are any undesirable *physiological* side-effects, I'm sure that you'll be on to them in a flash—but we guinea pigs can hardly ignore psychological side-effects, can we? And if we don't try to compile a sensible account of them, you'll miss them altogether, won't you? The PR department will have to deal with them someday. Admen aren't going to be able to invite the women of the future to 'GIVE YOURSELF THE GREEN LIGHT TO LOOK YOUNGER' if the psychological side-effects of the treatment outweigh the intended ones."

She could tell that she wasn't getting anywhere. They thought that it was all paranoia, and that it was getting in the way of the experiment—and she was horribly afraid that they might be right, and that she mightn't be such a good guinea pig as she'd hoped. She didn't like to think that of herself. She might not be able to compete with girls like Sheila on looks and charm, but she'd always hoped to make up for it with intelligence and integrity. The best thing, she figured, was to make light of it—at least for the present.

"But hey!" she went on, languidly waving one of her long green arms. "Let's look on the bright side. I don't feel bad. In fact, I feel good in a way I never even knew I *could* feel good. Maybe chloroplasts will turn out better than you ever imagined. Think how much money you could make if they turn out to be as marketable as the new Prozac, as well as one more small step on the long and winding road to the Fountain of Youth!"

The two researchers should have scolded her for impugning their motives, but her less-than-reverent manner reassured them, and they were glad of the opportunity to smile.

"Thank you, Tess," said Dr. Coghlan, tolerantly. "I think that's all for now—we'll see you next week. Please try to keep your imagination within reasonable bounds in the meantime."

"You've got a green spot on your right cheek, Dr. Coghlan," Tess said, by way of reprisal. "I told you to be careful about touching your face while you had those gloves on, didn't I?"

A ridge of high pressure sat above the southern counties for the entirety of the following week. There was hardly a cloud to be seen in the sky and Tess took full advantage of the sun's uninterrupted glare. Although she was careful to take her books and newspapers with her, so that she could maintain the pretense of working on her dissertation, she was far more concerned with her introspective analysis of the existential effects of being equipped with chloroplasts. She'd decided to take the view that even if it were a fantasy, it was an *interesting* fantasy.

The initial exhilaration that she had described, rather inaptly, as a warm glow soon faded away. It was not that she had ceased to feel good, she told herself—merely that she had begun to take the goodness of it for granted. There was no need to be dismayed by this. Now that she had got past the mere goodness of the effect, she might be able to find more exact and delicate metaphors with which to capture its essence.

She felt energized, but not in the vulgar sense that she wanted to take exercise. As the two researchers had pointed out, the extra nutrition she was receiving by virtue of the chloroplasts' activity was negligible. She wasn't putting on weight, thank God. Her energization was of a different kind, and she couldn't help recalling the words that had sprung to her mind when she had groped for a way to explain to Sheila how she felt. "Almost erogenous"

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was as near as she could get even after ten days of further cogitation. It wasn't lust that was energizing her, she decided, but it *was* something conceptually akin to sexuality. She felt *fertile,* in some admittedly perverse way that had absolutely nothing to do with ovulation.

In fact, Tess eventually conceded, Sheila had got nearer to the mark than she could possibly have supposed when she had referred scornfully to feeling a new kinship with trees and the orgasmic possibilities of rolling around in the grass. Tess *did* feel a new sense of belonging to the natural world, and a curious sense of *participation* in its collective activity.

Better not say that to Sheila, though, she thought, *or to Cocky and Hub. One or the other of them would be bound to start talking contemptuously about Gaia, and that's not it at all.*

But why wasn't that it?

Tess decided, after further reflection, that there was nothing in what she felt that could be likened to a sense of the supposed balance of nature—quite the reverse, in fact. The energization she felt had far more conflict in it than harmony, far more assertiveness than homeostasis. The pseudokinship she felt with the vegetal kingdom wasn't reflected in her own passivity but in a new sense of the activity and virility of flowering plants. Like her, they might appear to be passive and motionless as they soaked up the sunlight, but they weren't. All kinds of physiological processes were going on within them, and the protoplasm within their cells was just as active, in a biochemical sense, as the protoplasm of animal cells. After their own fashion, plants were *busy,* and in spring and early summer they were as actively engaged in the business of reproduction as the birds and the bees. They couldn't experience lust in an animal fashion, but that didn't mean they were insensitive to the vagaries of the season.

What, Tess wondered, did plants have instead of the pornographic imagination? What passed for romantic fantasy within the turgid flesh of stem and flower? The colors and scents of flowers were, of course, the pornography that plants manufactured to attract and nourish the insects on which they relied for pollination—but what was its echo in the plant's own inner being? What answered the plucking fingers of the wind within the heart of a reed? How did a bush respond to the seizure of its luscious fruits by the birds that would carry its indigestible seeds to distant sites?

It was all imagination, of course, and theorized imagination to boot: exactly what Dr. Coghlan had warned her against. And yet, Tess was convinced that she *did* feel different. The artificial chloroplasts transplanted into the lower layers of her epidermis had changed her, and not for the worse. She felt that they had extended the range of her potential wisdom, perhaps far more than any mere BA or MA ever could.

But she knew that it wouldn't last.

Within six weeks, the ceaseless processes of self-renewal that were at work within her skin would start killing off the cells that contained the chloroplasts, and the greenness of her skin would fade as the shriveled cells became sustenance for the legions of dust-mites infesting the mattress on the bed that she only used for sleeping.

Well, she told herself, *at least it'll help me concentrate on my dissertation. And if I'm a really good girl, maybe I can get Cocky and Hub to take me on for some kind of long-term study.*

For the first half of the third week, she stuck to the shorts and T-shirt that she had grown used to thinking of as her "working clothes," but as the

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weather became hotter and hotter she began to feel overdressed by comparison with the other people sunbathing on the lawns. She was a little worried about exposing the variegations of her skin-color to public view, but it became so uncomfortable wearing the shorts over her knickers that on Thursday she decided to take up Dr. Coghlan's lascivious suggestion and treat herself to her first-ever bikini.

She needn't have worried about attracting sarcastic comments; with the exception of the still-censorious Sheila, her neighbors seemed to have been driven by the yuck factor to extend an invisible cordon sanitaire around her customary station.

"You'd better put some sunblock on that," Sheila said, when she observed the pale expanse extending extravagantly between the two halves of Tess's brand new bikini. "The green areas are only growing greener, but your lily-white belly will burn before it tans."

"I don't have any," Tess confessed.

"You can borrow some of mine," Sheila offered generously. "I'll do your back if you'll do mine—provided that you're absolutely *sure* that it isn't catching."

"In science," Tess informed her, loftily, "nothing is ever *absolutely* sure. That's the beauty of it."

Tess decided not to mention the results of her experiments in introspection when she reported in to Drs. Coghlan and Hubbard for the third time. She contented herself with assuring them that she still felt fine, but that it didn't seem so startling any more. She didn't say in so many words that she'd made too much of a fuss the first time, but the two researchers clearly took that inference. Tess was longing to know what kinds of reports the other subjects were putting in—and, come to that, what the various clinical tests had so far revealed—but she knew there was no point in asking. The enquiry had passed the stage of informed consent and the ruling protocol now was the minimization of subject expectation.

Tess couldn't help noticing that the green spot on Dr. Coghlan's face seemed more noticeable than it had before, but she didn't comment on the fact. After all, she thought, a ruling protocol ought to cut both ways. There was no way an experiment of this kind could be provided with a proper double blind, but that didn't mean that she ought to disregard the influence of the experimenters' expectations.

She waited until the following Monday—by which time she had laid in her own supplies of low-factor sunblock—to ask Sheila the question that had risen spontaneously to the forefront of her mind.

"When you said that the green areas were getting greener," she said, "did you mean it literally?"

"Of course," Sheila replied, feigning innocence. "Aren't they supposed to?"

"I'm serious," Tess said. "I've looked hard, but I can't see a difference."

"You've been looking at it every day," Sheila told her. "I haven't. It's a slight difference, but I think it's real. Didn't they say anything at the hospital? Surely they'd know if the green bugs were breeding."

"They're not bugs and they can't breed," Tess replied, reflexively. On the other hand, she thought, the tests that Coghlan and Hubbard had done would surely tell them if there was any increase in the population of chloroplasts. If there *was* . . .

Suddenly, the jokes that most of her acquaintances hadn't bothered to make but which Tess's fertile imagination had catalogued anyway didn't

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seem so funny. Sheila had been the only one who had dared to suggest, even in jest, that Tess might be stuck like this forever, but she couldn't have been the only one who'd thought of it.

"Well," said Sheila, "maybe your body has got hooked on your almost erogenous glow and has started to make its own."

Tess didn't think that was any more likely than the chloroplasts having learned a way to reproduce themselves. On the other hand, she thought, neither possibility might be quite as absurd as she'd previously assumed. The vector that had ferried the chloroplasts across the membranes of her living skin-cells had been a protein virus-shell of the kind that acted like a microminiaturized hypodermic in certain kinds of infection. In the absence of any supportive DNA, the shells were supposed to be incapable of reproducing themselves, let alone the artificial chloroplasts, but Tess knew little or nothing about the process by which they were manufactured or the reliability of whatever trick was used to dispossess them of their native DNA.

She remembered, belatedly, something she had read in the *Guardian* science pages in the course of researching her dissertation about the reasons for the latest delay in finalizing the results of the Human Genome Project. There was, she recalled, a distinction to be made between the mapping of the genes on the various chromosomes, and the sequencing of the DNA, and some dispute as to whether all the extra DNA revealed by the sequencing was just junk, or whether it contained "deactivated genes" that couldn't or needn't be mapped because they were unexpressed in all kinds of human cells. Suppose, she thought, the artificial chloroplasts and their associated paraphernalia had contrived to wake up some of the deactivated genes . . .

That night, Tess began a careful examination of the edges of the discoloration introduced into her flesh by the green goo.

It was very difficult to be certain, but she thought that she could already detect a slight expansion of the green area. Thee was no sign of greenness about her face or the areas between the two parts of her bikini, but the white margins exposed by the skimpier costume did seem to be shrinking slightly.

Tess's first reaction was direly anxious—but her second thoughts swung like a pendulum to the other extreme. *If it's true,* she said to herself, *there's no way they can stop me being part of a long-term study, and they'll have to take the subjective feelings more seriously.* Then, of course, they swung right back again, as she realized that if green arms and legs were enough to make a pariah, green arms and legs that were growing greener by the week might well turn into a serious social handicap. It was one thing to put her love life on HOLD while she was doing her MA—or, at least, telling herself that that was the reason—and quite another to blight its prospects indefinitely.

Oh shit! she thought. *I'm going to have to tell my parents!*

After a while, however, she calmed down sufficiently to take a more balanced view. *One way or another,* she told herself carefully, *the chloroplasts really are multiplying—but that doesn't mean they can keep on multiplying indefinitely, or that they can migrate from one epidermal layer to the next. Even if Cocky and Hub really are the Frankenstein twins, that doesn't make me a monster.*

The next time Tess reported in for examination, she wasn't at all surprised to find Mrs. Parkinson in attendance. The slight worries she was still entertaining as to whether the expansion of her green areas might be an il-

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lusion vanished immediately. Resea[redacted]only recalled ethicists if their experiments had thrown up real ethical problems.

The first thing Tess said to Dr. Coghlan was "I suppose you've noticed that the green spot on your cheek is getting bigger and brighter."

He didn't try to deny it. He nodded, and looked at her with wary eyes, wondering what she was going to say next.

"I expect you've been trying to get rid of it," Tess commented, keeping the tone of her voice scrupulously even. "No luck yet, I guess."

"Actually," Dr. Coghlan said, smugly. "We think we've already found the fix."

"But you decided to let it go on growing," Tess deduced. "That way, you can experience for yourself what I've been trying unsuccessfully to explain to you. Good for you. I suppose, all joking aside, that there *isn't* any possibility that it's catching?"

Dr. Coghlan didn't rush to answer that. Dr. Hubbard opened his mouth as if to cover up the hesitation, but it was Mrs. Parkinson who got in first. "There's no need to worry unduly, Tess," she said. "The fact that the chloroplasts are multiplying within the skin of some of the subjects doesn't mean that they can be communicated to other people. Nor does it mean that you're stuck with them indefinitely. So far as we can tell, the chloroplasts can only spread to skin that's exposed to sunlight—and they don't persist for very long in skin that's permanently covered up. If you want to stop the coloration spreading, it seems that all you need to do is cover the relevant parts of your body—ditto if you want to be rid of the color you've already got. The Ethics Committee has decided, in view of the fact that the situation has changed materially, that you'll still be paid in full even if you decide that you'd rather do that, but we'd prefer it if you didn't."

Tess wasn't stupid enough to think that the offer to pay her even if she decided to try to get rid of her chloroplasts was a noble gesture. What Drs. Coghlan and Hubbard wanted now was a divided sample. They needed to be able to track the progress of one group whose members were resolved to get rid of their chloroplasts, and a second whose members were prepared not merely to hang on to but let the chloroplasts spread—if not to the face, at least to the rest of the body—and maybe a third whose chloroplasts were dying off anyway no matter what they wanted. The Ethics Committee wouldn't allow the experimenters to demand that any of their guinea pigs do the kind of overtime that required them to stay green and become even greener, but they were prepared to send their own representative down to ask—maybe even to beg.

"Okay," said Tess, figuring that this was one occasion when she wouldn't have to put on an act. "You can count me in. I'll hang on to mine."

The way the two doctors perked up told her that she had just volunteered for the minority. That wasn't a surprise. Mrs. Parkinson had already let slip the fact that some of the subjects hadn't experienced any multiplication at all.

"Green is the color of envy," Tess said, glad of the opportunity to quote herself. "I guess I'm a sinner at heart, or maybe just a born copywriter. They say that 70 percent of advertising is aimed at people who already use the product, just to help them feel better about it. If the chloroplasts like me, I'm prepared to like them."

"Tess is a Media Studies graduate," Dr. Hubbard reminded Mrs. Parkinson.

"You do realize, Tess," said Dr. Coghlan, carefully, "that the reformulated

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study is going to last a lot longer than eight weeks? You will be paid commensurately, of course."

"Oddly enough," Tess said, "it's not just the money that interests me. I want to understand what's happened to me, in every dimension. I think we're all on the same side—but I do want you to be on mine as well as me being on yours."

Perhaps because he was the one with the green blot on his facial landscape, it was Dr. Coghlan who nodded. "That's fine," he said. "If this *is* a whole new ballgame, you'll have some say in the way it develops. Everyone who's still involved will have a voice."

Tess saw Dr. Hubbard frown at that, because it was blatantly bad methodology to let experimental subjects dictate the terms of the experiment, but Mrs. Parkinson seemed relieved that Tess wasn't making difficulties of a different sort. As a Media Studies graduate, Tess understood just how close the screwed-up experiment had come to being exactly the kind of public relations disaster that could ruin the hospital and put back the cause of human somatic engineering by five or ten years. Right now, the fact that being green made at least some of the experimental subjects feel good—even if it *was* all in the mind—was the best thing Cocky and Hub had going for them.

By the time the green tinge finally made it to her fingertips, toes and throat, Tess had finished her dissertation and her course. The time had come to say her final goodbyes to the people who had been her neighbors in the Hall for the past year. Most of them politely refused to notice the fact that she was still getting greener, but Sheila had kept in close touch with the week-by-week progress of the experiment.

"Have your parents seen it yet?" she asked.

"Not yet," Tess confessed. "I had to tell them, but they won't actually see it until next week. Even then, it'll just be a flying visit. Dr. Coghlan's fixed up a flat for me. I'll be sharing with the other woman who decided to stay with the study, although I haven't actually met her yet. Next Monday will be the first time all five of us will be allowed to get together and compare notes—six if you count Dr. Coghlan."

"They're going to think it's some horrible disease, aren't they?" Sheila asked, refusing to be distracted from discussion of the likely views of Tess's nearest and dearest.

"Not once I've explained it to them," Tess said, without overmuch confidence. Although she'd made every effort to keep her friend in touch with developments, she knew that Sheila still thought that it *was* a horrible disease. "Once I've given them the good news," Tess plugged on, doggedly, "they'll hardly be able to wait for the chance to try it out themselves. That's what every *sensible* person will think."

"It'll never catch on, Tess," Sheila told her, firmly. "No matter how good the treatment is at fighting wrinkles, and no matter how hard people like you try to convince people that it can also give you a new a kind of high, *nobody* is going to use it—unless you can develop a suntan-colored version. Just because radical environmentalists say that green is good, doesn't mean that people will ever be willing to have green arms and legs, let alone faces."

"Don't knock it until you've tried it," Tess advised her. "You'll be able to do that one day, you know. It's *not* catching, and you can get rid of it easily, any time you want to. That doesn't mean that it isn't going to change the world, but it does mean that the change will be gradual, and voluntary, and con-

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trolled: the best of all possible worlds. Believe me, Sheil, you'll be green all over before you're forty—and so will everybody else. I know I can't convince you of that now, but it doesn't matter. When you're ready, you'll convince yourself."

"Well, if it makes you feel better to believe that . . ."

"I don't have to believe anything to make *me* feel better," Tess told her, sternly.

"I *told* you that you'd be stuck like that," Sheila said, sticking to her own guns with equal determination.

"Yes, you did," Tess admitted. "But you thought it was a threat, and it wasn't. I'm happy to be stuck—*more* than happy."

"It's your decision," Sheila conceded, grudgingly, "but the sun won't always be shining. This is England, and winter's on its way—and you won't always be able to talk yourself into believing that it makes you feel great. I've known you long enough to know that you were desperate for *something* to make you feel better, even if you didn't know it."

Sheila wouldn't consent to being hugged before she went on her way, even though Tess had assured her that Dr. Coghlan was "99 percent certain" that the chloroplasts couldn't possibly be communicated from one person to another even by contacts far more intimate than a fully clothed hug.

Although winter *was* on its way, it still seemed a fair way off to Tess, and the warm weather had already extended all the way through September. As soon as Sheila's taxi had departed, Tess stripped down to her bikini and went back to her customary station on the lawn. She knew that she was going to miss Sheila, who had at least been willing and able to talk to Tess about what she was doing, but she felt that she had every right to hope and expect that life with her new flat-mate would be frictionless.

As the sun began to play upon her skin, Tess felt the familiar "glow" spread across all the affected areas of her body, and wished that she had the opportunity—or the courage—to expose all the remaining parts: the parts that she couldn't help thinking of, nowadays, as "etiolated." She wished that she'd been able to make Sheila understand that it wasn't a "new kind of high" at all, but a new kind of *level*: a new awareness of the fact of life. That was, admittedly, *all* it was—the rest was the play of intelligence and imagination—but it was an awareness worth having for all that, and greenness was a price that Tess was more than willing to pay for it.

She knew that it wasn't going to be easy to be a pioneer, although it *would* be fun. The interviews she'd so far given to magazine and TV journalists had been filtered through the hospital's PR manager, and discretion had prevented any mention of her ambition to keep her chloroplasts indefinitely, but the journalists had already begun to speculate and pose more awkward and more interesting questions. Almost as soon as she explained herself to her parents, she was going to have to start explaining herself to the world—but she was prepared to meet the challenge, and looking forward to it. She had never expected to find such an easy route to celebrity—or, for that matter, to self-satisfaction.

The only thing worse than being talked about, she reminded herself, as she closed her eyes and stretched herself out to obtain the fullest benefit of the sun's rays, *is not being talked about.*

To begin with, of course, there would be a great many people who would not be able to envy her—but in time, and with the right encouragement,

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that would change. No matter how marginal the effect of Cocky and Hub's invention might be on the appearances of aging, it might well catch on among the young merely as a fashion. Tattoos and tongue-studs had come and gone, but greenness could be forever. Cleverly marketed, it could be as great a leap forward, in its way, as the invention of clothing. Properly managed, it could give the human race a new consciousness of self and environment, of life and light, of sensation and sensitivity. . . .

Her reverie was interrupted by a polite cough. She opened her eyes to see a young man standing over her. He was dressed in shorts and a T-shirt, and his arms and legs were dappled with pale green patches.

Tess sat up abruptly.

"I'm Sam," he said. "Mine didn't take. I haven't tried to cover it up, but it's almost all gone anyway. Dr. Coghlan says that's good, because it allows him and Hubbard to make comparisons, to make a better start on figuring out the whys and wherefores—but I don't think so. You're Tess, right?"

Tess realized that he was looking for sympathy, and that he had sought her out in the expectation of getting it. He wasn't one of the lucky five—but he wished that he had been.

Suddenly, everything Tess had just been trying to tell herself seemed to click into place. It was as if it had all been in suspension, waiting for some crucial final endorsement—and here it was. Sam was short and spindly, not at all the kind of boy who would normally entertain the notion of chatting up someone as tall and solid as she was, but all normal prejudices were irrelevant to their present situation.

"Right," said Tess, belatedly. "I'm sorry, Sam. I can imagine what you're feeling."

"Sure," he said. "They'll have to let me have another crack, won't they? I've *earned* it, haven't I?" The point he was trying to put across, Tess realized, was that he had earned it no less than she, because he'd volunteered in exactly the same way.

"You'll be first in the queue," she said, as she came to her feet so she could look him in the eye. "Bound to be." As their stares locked she saw that there was admiration in his gaze. When she held out her hand he took it, not merely readily but avidly, as if he hoped that in spite of what Dr. Coghlan had concluded, it just might be catching.

"Hi," she said, unnecessarily.

"I expect we'll be seeing alot more of each other," Sam said. "They're letting me stay on as part of the control group. Compare and contrast—you know the sort of thing."

"I do," she said.

"There are five of you, not counting the doc," he observed, parroting the same information that Tess had earlier given Sheila. "Three green males, two green females. I'll be part of sample two—three males and two females who couldn't stay green even though they wanted to. Then there'll be the *real* weirdos—the ones who've been green but want to be rid of it."

"It's okay," Tess assured him, with what she hoped was a winning smile. "I'm not prejudiced—against the ungreen, I mean."

"I am," Sam admitted, dolefully. "I didn't used to be, but I am now."

"Green is the color of envy," she quoted, hoping he hadn't heard it before—but it was far too obvious. He probably hung out with the kind of people who wouldn't let the unease of the yuck factor get in the way of their jokes and insults.

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"If only envy were enough," he said plaintively.

"Envy is what makes the world go round, Sam," she assured him, assuming that she was entitled to treat him with a measure of friendly condescension, given their different circumstances. "It's the motor of progress. You might be losing your first crop of chloroplasts, but we're both on the fast track to the future. For us, at least, envy will be enough. The *hoi polloi* will have to pay good money for what we'll get for free. So much for the cynics who never volunteer."

"I only did it for the money, to begin with," Sam confessed.

"I bet that's not what you told Mrs. Parkinson."

Sam grinned. "For her," he admitted, "I wanted to repay a little of the debt I owed for the wonderful inheritance of civilization. It wasn't exactly a lie—just a truth stretched to the limit."

"Altruism has its rewards," Tess observed. "I figure we're just as entitled to our share as anyone else. Cocky and Hub will have to do everything they can to keep us sweet. Once the journalists really get busy, we won't be experimental subjects any more—we'll be walking ads."

"You will," Sam said. "You're the one who's green *and* photogenic."

Tess accepted the compliment proudly. She wondered if it would be a good time to warn him that she didn't do anybody else's washing but her own, but she decided against it. If the occasion ever arose, he'd figure it out.

"It's a lovely day, isn't it," she said, stretching her limbs and neck to catch as much sun as she could.

"Lovely," he echoed. "How long do you think it will take?"

Tess didn't ask him what he meant. He was asking how long it would take Drs. Coghlan and Hubbard to sort themselves out well enough to be able to give him a community of chloroplasts that wouldn't perish so easily in his stubbornly unreceptive flesh. But what he was *also* asking, she figured—whether he knew it or not—was how long it would take to lead the hordes of the unenlightened to the Promised Land of eternal greenness and pleasantness.

"I don't know," she admitted. "The seeds of the future have to germinate and grow at their own pace, and the ground out there is stony in some parts and thorny in others—but life is stubborn. All the world was barren once, until the plants conspired to make it what it is today. We're the latest phase in the infinite plan—what Walt Whitman called the journey-work of the stars. It might not be easy, but all it needs is patience." O

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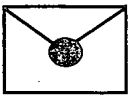

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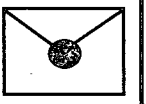

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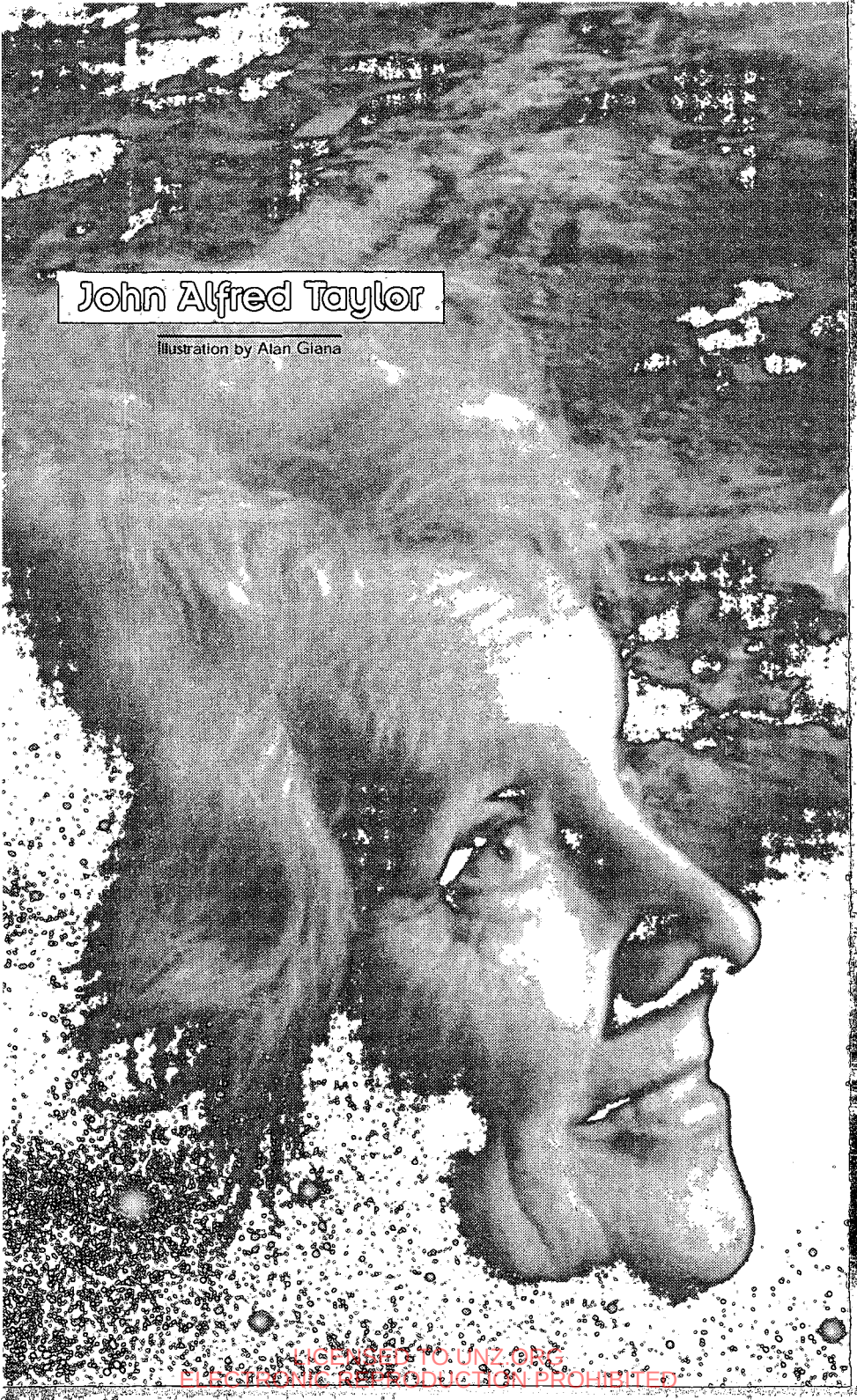

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The first colonists on the moon may be scientists, engineers, helium miners, and semiconductor line workers, but like the settlers of the old west, they will all be risk takers. John Alfred Taylor spins an interesting yarn about the good, the bad, and the audacious in . . .

THE MEN ON THE MOON

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"What was the Moon like back then, Gee-Gee?"

Helen walked her six-legged chaise closer to the window, brushed the touchpad in the arm to raise the chairback upright so she could look down into the plaza while considering her great-granddaughter's question. Fran shifted her stool nearer, too.

"What was the Moon like? Haven't you looked at the documentaries, listened to the oral histories?"

"Of course. But what was it really like for you?"

The old woman grinned. Even with her chairback vertical she still had to look up to the girl, tall and gracile as only a child raised on the Moon could be.

"That's what the oral history folks wanted to know when they came round with their teeny recorders. Most answered, because most didn't have much to hide. They asked me twice, and I kept my mouth shut. I had things to hide.

"Not about me. Everybody knows I'm a bitch, that bitch was my profession then. Except when I was out laying line. And either way making mucho money, whether laying men or laying line."

"That's what I want to know," Fran said. "About the men."

Helen shook her head in mock disapproval. "They were just men, good and bad, smart and not so smart, but all horny. Just men."

"I already know about horny, Gee-Gee."

"I'm sure you do."

"But what I want to know is how things felt then."

"I was young then, full of piss and vinegar. I felt like you feel now. Maybe you'll know the difference when you're half as old as I am now. We were all young then.

"But I guess I can tell other people's secrets after all these years. Don't have to hide them anymore. Dione and Melinda are dead, and Petrakis is off to the moons of Jupiter, dreaming of making more money in his old age.

"Except I can't really tell you how it was. Though maybe I can try—

"Just think, honey. Here we are in Archimedes City looking down into Northwest Plaza. Northwest Plaza—I knew Archimedes when it was six huts and a hub. Now there's the Plaza three hundred meters below, with all those vines and flowers hanging on the air circulation tower in the middle, and more hanging from my balcony and the apartments around.

"And I can afford it. I can afford this view while I last, and I might last awhile. One hundred and four and still counting, with no memory problems to speak of, even if I remember when I was your age better than what happened last week.

"There wasn't any space or greenery then, except when you went down the long tunnel to what Stanley Rosten used to call his East Forty—East Forty because the ag- and air-module was nearly forty meters to a side—though most people wouldn't call bean vines and pumpkins and zucchini and peppers anything as fancy as greenery. But the air in the Forty smelled sweeter, though Stanley made you earn your keep weeding or misting if you wanted to hang around for long.

"We lived hard then: only two showers a week, nothing but rabbit or chicken when we got meat, even toilet paper was rationed, and we worked every other shift during lunar night, the closest thing to luxury the Helium Consortium could afford.

"I didn't mind, because wages were good, overtime was better, and profit

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sharing best of all. Not counting what I earned from men on the side. I've probably worn your ears off telling you how I never had anything nice to wear when I was a girl Groundside in Montana, and how dirt poor my family was, but I never minded living poor on the Moon.

"Maybe because I was getting rich, maybe because everybody at Archimedes Base was pretty near equal some ways. Sure, Director Bekins might have showered every day and had meat more often, but he wore the same grubby sort of moonsuit we did, and worked just as hard or harder.

"We knew that because there wasn't any privacy, nor much chance of hiding anything. Once time Bekins scolded his secretary for something, then apologized immediately when she explained how it was his fault. She didn't tell anybody else—they were overheard—but the whole base knew it within hours. And nobody mentioned it to either of them. Tact is one thing you learn from living in each other's pockets. Especially if you're smart.

"And most of us were above average, even if we weren't like the scientists on Farside. We were here because of ^{3}He, but a lot of the helium miners had master's degrees or Ph.Ds. There was even a dishwasher with a doctorate, and he never complained, because he was on the Moon.

"Though there's smart and smart. Some persons in Archimedes Base knew everything there was to know about solid state physics or selenography or closed-system ecology, but next to nothing about getting along with other human beings anywhere, let alone people living in each other's pockets—stupid geniuses lacking all common sense. Lots more were the salt of the earth, whether brilliant or average. Others were brutes you wouldn't want anywhere near you except that they knew how to operate heavy equipment in vacuum.

"But most of us learned to be tactful enough, learned how to get along, when to make jokes, when to stop making jokes, when to let somebody be private even if the only door he could close was his face.

"I never was one of the smart ones—I had my heavy equipment operator's license before I earned my GED, and only sweated my way through that because without it I didn't have a chance. One way we had of saying somebody wanted the impossible last century was 'He wants the Moon.' Well, I wanted the Moon. And I got it."

"What about the men, Gee-Gee?"

Helen chuckled. "All right, Fran—the men. Ismail's the first one I think of. Can't remember the little shit's last name. Wish I didn't remember him at all. That was when I was laying semiconductor line for the Lunar Power Grid—

"When things went proper, laying line was pretty close to automatic. We worked at night of course, so things weren't blurred by the Sun.

"The survey team set up a reflector beacon each end of a straight stretch, and when I came to the start I'd stop to pick up the first, then look for the one at the far end with the laser on the roof of the tractor cab, lock on it to let the autopilot take over navigation, while I watched the temperature in the melt tank and extruder nozzle temperature and half a dozen other things going on in the fabricating module behind. The semiconductor power conduit came out of the extruder nozzle like toothpaste from a tube, and as soon as it solidified enough got wrapped in a spiral spacer of multilayer cryogenic crinkle insulator inside a self-welding spiral of aluminum with reflective coating on the outside. Every two meters the aluminum was chopped off, to be replaced by a equally reflective sleeve—"

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Fran yawned ostentatiously. "I know about power lines, Gee-Gee. They're everywhere when I go Surface."

"Because we did our job," Helen snapped. "And if you know so much about power lines, what was the sleeve made of?"

"Woven carbon filament. Like always."

"Always was new once. You're the one who asked about how the Moon was last century when things were lively."

"But I wanted to know about the men you laid, Gee-Gee. Not the line."

"You've got a single-track mind, girl. But I'll come to Ismail soon enough. Because one thing leads to another, like every two meters the crimps around the sleeve locked into the ground anchors the work module planted, and then there was another two meters wrapped in aluminum—"

Fran frowned.

"Like I said before, laying line was almost automatic when things went right. But when things went wrong, it got interesting—"

Helen's great-granddaughter brightened.

"And sometimes it got downright disastrous."

Fran looked even more interested.

"I was laying line north toward Plato, going down a 40 degree slope between the Spitzbergens and Archimedes D, and had the line layer stopped right then while I waited for Ismail to bring back a new tank of superconductor melt from the mobile factory ahead.

"I'd called in plenty of time, but it was still a minute or two before I saw the flashers of Ismail's tank carrier climbing toward me. My empty was already disconnected and eased down the unloading ramp to the left, so he came up on the right of the trailer, extended the loading arms, and ratcheted the new tank into place. The readouts from the new tank were just right: internal and peripheral temperatures, viscosity, mixing paddle speed, but I put on my helmet and went out through the drum lock anyway. Most people would have trusted the feed valve to connect like it was designed—and I'd never heard of one failing yet.

"Still, I jumped up on the work module trailer and saw the valve was okay, then kicked it just in front of the nozzle radiator fins to be sure. Ismail made some joke about my being too careful, and I accepted the new tank for the taped record. He backed around in front of my cab and came up on the left to pick up the empty, pulled away and flashed his lights to say goodbye.

"Everything was fine. Nominal, as we used to say. We'd traded tanks dozens of times, Rooney or Suarez or Ismail and me. Except just when I was heating up the extruder nozzle I noticed Ismail's flashers turning up and over downslope.

"I was too far away to see much, and afterward Ismail never remembered the moment when his rig jackknifed. I could only guess. Maybe even an old moon hand like Ismail forgot that momentum stays the same even though there's less friction, or maybe the regolith right there wasn't as compacted as it looked, even if the survey team had been that way.

"Anyway, I put the line layer behind on hold, making sure the melt would stay hot and mixed, and in half a minute was out and doing the lunar lope down toward the flashers fast as I could go.

"The cab was on its side, with one of the big woven wire drive wheels still spinning overhead. Once I checked the outside telltales and saw there was still pressure, it wasn't hard getting in: the designers had had the sense to put the lock inside the same front bumper cage that protected the headlights.

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"I walked along the rail of the slanted steps, holding onto the other rail above my head, and found Ismail, as much by sound as sight, because he was out cold and snoring like a man at the end of a two-day drunk. He wasn't wearing his safety belt and had been thrown across the cabin—and one of his feet was pointed the wrong way.

"I wasn't so worried once I checked the pulse at his throat, and had time to put out an emergency call right away, hanging doubled over the back of the driver's seat. Even the simplest controls are a puzzle sideways.

"By the time I dropped back down Ismail was making wake-up noises, and soon enough could tell me where it hurt after I got the bottom half of his p-suit off. I gave him a shot of painkiller before I put on the autosplint; lucky it was a simple fracture.

"Then things turned weird. Or else men are naturally irrational. Ismail had been a customer of mine before, and now he wanted a quickie before the emergency lifter arrived.

"What about your leg, I asked him, and he said we'll lie on our sides. Doesn't it hurt, I said. Ismail insisted it would help him forget the pain.

"Finally I gave in, because I'd already taken the bottom half of his pressure suit off, and could see he was more than ready. But of course I made him swipe his moneycard through the slot on my cashkey first.

"We had the gussets on our moonsuits closed again by the time the emergency lifter came down through the regolith its thrusters kicked up. After they took Ismail out, I went back up the slope and laid another three klicks of line before my replacement arrived.

"Ismail's contract was finished before the end of his sick leave, which let him go back to Earth and stop payment on me.

"I don't know why the memory rankles to this day, why I can't write Ismail off like so many others: maybe because he was so ungrateful after I did the Florence Nightingale thing on him. Or maybe he just sticks in my mind because he was cheaper than cheap."

"Well, I'd forget him," Fran said.

"I've tried, honey. Because he isn't worth remembering. But Timothy Doyle was worse."

"Didn't you know any nice men?"

Helen nodded. "Sure did. I'll get to them soon enough."

"And another thing, Gee-Gee—"

"Yes, honey?"

"A wreck got you alone with Ismail then. But wrecks are special, and you said there never was any privacy—"

"We found places, my customers and me. Almost got caught more than once, and other times people could guess. Which helped my side business in the end.

"My one time with Doyle's a good example—

"By then I was assistant area super—no more laying line for me. And part of my job was liaison with ComCorp. We needed them, they needed us, the Consortium needed both, and financially all three companies were pretty near incestuous—interlocking directorates like you wouldn't believe.

"I liaised a lot. But only once with Doyle.

"We needed a line-of-sight link between Mt. Pico and the south wall of Plato soonest. I'd sent the priority request to ComCorp four days ago, along with a purchase order that was the next thing to a blank check. And hadn't

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seen a hint of action since, even when I looked down at the top of Pico from a hopper on the way back south just hours ago.

"So I didn't step in at the office after landing, but went down three more levels and along the diagonal tunnel to ComCorp. Nobody live was out front. The AI receptionist said Doyle was the only one around, and he was in the switching vault. I said I had to see him right away and walked in. The Artificial Intelligence reminded me no wireless systems were allowed inside, and I left my phone and went through the outer and inner doors. The vault was isolated, with nothing but heavily-shielded cables coming in through the big Faraday cage. My footsteps echoed, and Tim Doyle looked up at me from a tangle of cables and switching modules at the far end. He was Black Irish, and good-looking if you liked rough trade.

"I told him what we needed, and he plugged in a dataphone and expedited the work order immediately, then turned to me and leered, which I didn't mind at all.

"Doyle knew my reputation. Business was business, with word of mouth always the best advertisement. I nodded yes when he propositioned me, and he spilled a pile of padded blankets off an equipment cart, spreading them on the floor for us. He swiped his moneycard and I opened my suit.

"I always carried a knife in one of the pockets of my moonsuit just in case, a little folding thing with a 8 cm leaf-shaped blade with a finger hole in the blade for quick opening. This time I was glad I did, because Tim Doyle's idea of foreplay was slapping me hard, then slapping my head back the other way. Dizzy as I was, I had the knife open and slashed the inside of his wrist instantly, then went for his face. He jerked his head back, but not fast enough to avoid a new dimple in his chin.

"Doyle was half off me, so I was able to knee him in the groin, and wriggle out from under. I got out of the vault so fast I almost forgot to grab my phone before I started back up. At least he'd prioritized the work order first, I told myself when I shopped shaking."

"Awful!" Fran said.

"It was, honey, though I did more damage to him than he did to me. I thought that was it, over. Because even if I ran into Doyle again—likely enough, considering how small Archimedes Base was—I'd make sure never to be alone with him. And I sent back his payment with my cashkey right away to avoid any possibility of further involvement.

"It wasn't over, though Doyle never bothered me again. Next sleep-shift I was watching a book on the wall, tired and almost ready to turn it off, when the phone signal buzzed. I didn't recognize the ID number in the corner of the wall, so answered blind, and didn't recognize the person who replaced the rows of print either. She was young and furtive and had a black eye. Easy to see that because her face was too close to the camera and filled the whole wall

"'Helen Maglore?'

"'That's me.'

"'I'm Melinda Doyle—'

"I can't remember what I said next, but she made it clear this was a friendly call. 'He beat me up because of you, but I don't blame you—'

"'He told about us?'

"'Tim always does. Usually to compare me unfavorably to the woman he's met.' Doyle's wife actually smiled at me. 'I just wanted to thank you—'

"'Thank me?'

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"'For doing what I'd do if I only had the strength. I smile inside every time I see that tape on his chin.'

That's how I got to be friends with Melinda. She needed one, with a husband who used her for a punching bag. He could get away with it because they lived a few klicks outside Archimedes Base—they'd floated a loan for a private ag module to raise stuff the Consortium farms didn't grow.

"Endive and asparagus and chives as I remember. Sensible only goes so far, I guess, after that people pay extra to break the monotony.

"Melinda ran the farm, so had some wiggle room in spite of Doyle's controlling ways: she delivered, she came in to pick up supplies, and most important of all, she found a way to evade his viewphone tap.

"Nothing sophisticated, because she didn't know enough, and with communications his specialty, Doyle would have caught anything tricky. Expertise has its own special blindness. What she did was rent an extra wireless phone under another name and hide it in the farthest corner of the ag module, with its line-of-sight antenna to the nearest pickup tower concealed on their solar power array. And the payments never showed up because she kept the books.

"We talked or met when we could. Both of us were used to hiding things, and we found ways. Sometimes she called me from the farm. Other times we got together for a few minutes in the back of the market or a little bar nearby. Once Doyle was away two days, and we had supper in my unit, microwaved lemon chicken except she brought the salad herself."

Fran made a puzzled face. "Why did she stick with that man?"

"Because Melinda didn't have any other place to go. Remember this was Archimedes Base then, not Archimedes City. Being married to Doyle was the only reason she was on the Moon, she didn't have any special skills—"

"She could run an ag module."

Helen's every wrinkle smiled. "Yes. And that mattered later. But right then she didn't see any escape except—sometimes she talked about killing Doyle. Thinking about killing him gave her a glimmer of hope, so I never argued when she did.

"Things smoldered on like that. Doyle would knock her around, she'd fantasize killing him, and I'd do the best I could to cheer her up and keep her going.

"The next john I remember was different. Kostis Petrakis was a decent man."

"About time you mentioned one, Gee-Gee."

"He took over as head of the helium condenser. Kostis' problem was that he loved his wife very much, but she was eight months pregnant. Every night he lay against her back spoon-fashion, his hand over her womb, frustrated and happy at the same time. When he finally approached me he was guilty and embarrassed.

"I told him a lot of husbands in his situation felt that way, and got him into the backup cryogenic pump room as soon as possible. I was doing good as well as making money, so didn't mind the bare floor underneath too much. Course I'd have felt a lot different about that with the pumps on, and my ass frozen to the floor.

"The funny thing was that I'd met his wife before I met him. Dione had been brought in to coordinate the AIs for the power grid, and I'd been impressed by her intelligence, as well as the way she carried herself that far gone, though pregnancy is easier in one-sixth gravity.

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"She had a terribly demanding job for a person in her eighth month. One would think that a person in charge of networked artificial intelligences wouldn't have to travel; I mean, no matter where they were, they were all, the same place, so to speak. But that just shows how little I knew. There were no maglev lines then, so it seemed like she was always swooping off in a hopper or requisitioning a six-wheeler if things were closer in.

"Petrakis only came on to me that one time, I guess when he was desperate and had to stray. Then he waited like a good husband while Dione came closer to term.

"Everything came to a head at the worst possible time, one calamity triggering another. Whatever happens, people always say it was at the worst possible time, but things did get pretty bad.

"I was on an inspection tour when the particle storm warning came. We were headed northwest, toward the spot where the Jura Mountains lifted out of Sinus Iridum, on the descending arc of our trajectory, and the hopper pilot assured me we'd be down and safe underground before the proton storm hit, then called ahead to give our ETA.

"Chen's reassurance might have made me a little too complacent, because I stopped on the landing pad and looked up at what I'd come to inspect: the girders and ground anchors of the main superconductor cable going straight up the face of the Juras. I'd been told it was ahead of schedule. Then Chen grabbed my arm and pointed toward the ramp; maybe I was cutting it a little fine. We ran between the parked machines and down between banks of regolith into the arch over the lock.

"Bailey offered us booze as soon as we cycled through into the trailer-dorm. The usual improvised vacuum still. The rest of the crew was sitting around the mess table, and already well on the way to cheerful. I made a couple of supervisor-type remarks about drinking during the working shift, but Bailey pointed out there was no telling how long the proton storm would last. He was right, so I said I'd have just one, because I was there in my official capacity. Bailey said something about my unofficial capacity being a lot more.

"The stuff wasn't bad for homemade brandy, anyway better than paint remover. Though it might have done for sheep dip. 'You start with rice and raisin?' I asked. Not that I didn't know already; even if he'd hooked his fermenter exhaust into the air scrubber, there was more than a hint in the funky air.

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"Bailey just laughed. 'You want *malted barley?*'

"Then the blue light and warning beeper came on. The particle storm had reached the Moon, but everybody was deep and safe, with nothing to worry about. After Bailey turned off the alarm, we looked around the table to toast each other in sheep dip.

"The crew decided to have supper, because their second shift was almost over when the flare warning came, but I wasn't hungry and begged off. Not hard to refuse, with the main course sprout and mystery meat casserole.

"Even after drinking Bailey's raw brandy, I was antsy. I'd come out to inspect, not huddle underground, so finally I went through the lock and tunnel at the far end.

"The switching station beyond was permanent, and would be there long after the trailerdorm was dug up and towed away. It was only partly operational with the trans-Jura link unfinished, but enough so I could get some idea of how the switching controls and safety interlocks were doing in the particle storm.

"Even with the Grid's AI nodes safe below the surface, some of the network links were line of sight—dedicated and hardened, but still in harm's way. At least we weren't depending on the comsats and the rest of the regular phone system.

"I called up the display for the whole northern hemisphere grid first thing. Everything looked fine on the switching and current flow diagram—topologic rather than geographic, with little blobs of light running down inside the lines like blood corpuscles, and the switches smoothly changing from yellow to green and back again. Next came the AI net—everything looked good there, except there was this one node emergency flashing.

"The net display was topological too, but I knew where that AI node was, because there the line on the diagram went straight right. The node was where the line east went into the Mare Serenitatis between the Fresnel Promontory and the Caucasus Mountains. It didn't make sense—I looked at the flow diagram again, and everything still looked good there. But when I switched back to the AI net display, Node 23 was still flashing.

"I decided I'd better check with our AI expert—maybe I could connect with Dione Petrakis in spite of the proton storm. After three or four tries I got Archimedes Grid Central. But not Dione. She'd headed east in a fast six-wheeler hours ago. Just doing her job in spite of her pregnancy.

"So I knew why Node 23 was flashing, though not how. But then Dione could make an AI sit up and beg. She must have holed up in the bunker, and this was the only way she could send a distress signal. There was nothing we could do for her till the particle storm was over, except let her know we'd seen her distress signal.

"Maybe I could get the bunker on the phone. Comsats went dormant automatically during a proton storm, but there might still be a chance of a surface connection. No luck, though I kept trying for ten minutes. Somewhere between Archimedes and Node 23 a line-of-sight relay was out. No wonder she'd had to start the emergency flasher.

"I went back to the trailerdorm and told Chen to plot a hopper course straight east for Node 23, so we could lift as soon as the storm was over. He didn't say a word once I told him about Dione's predicament, just frowned and bent over his calculator.

"It took Chen longer than I expected. He explained why afterward: the lunar positioning satellites might be out, so he had to plot a perfect ballistic

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course east, and then figure out the boost back to Archimedes once Mrs. Petrakis was aboard—the hopper's built-in strain gauges could let him figure in her exact mass. 'But we have to top off the tanks from here before we jump,' he told Bailey.

"'Easy,' Bailey said. 'We've got plenty.'

"Then we all sat and waited for the storm to be over. I was so worried I let Bailey pour me another drink, but Chen refused because he was piloting.

"By the time the particle storm petered out everyone was suited up. All we had to do was lock our helmets and glance at the automatic safety check lights in the rim of the visor.

"It wasn't hard moving the hopper to the cryogenic fuel pumps. The eight of us grabbed the horizontal braces on the landing struts and carried it over, then carried it back to the launch pad once the tanks were topped. Chen and I strapped in, connected our suit lines, waved to the others once they backed off, and lifted up and east. Below, the landscape was too bright to see much detail, nothing but a washed-out blur.

"Once we passed midpoint Chen swiveled the main base of the hopper forward for the braking burn, then let the autopilot and radar altimeter take over till the last moment, when he took us sideways a few meters looking for a flat place, then goosed the throttle a tad to let us settle down light as a feather. A feather on Earth, honey, not Surface."

"I know, Gee-Gee," Fran insisted. "A kilo of feathers falls as fast as a kilo of lead."

"Chen was some navigator. We came down less than fifty meters from the bunker beacon, and trotted for the lock.

"Dione was mighty sick, and glad to see us. Her face was bloated, her eyelids swollen until her eyes were half-shut. She said it was something called preeclampsia, and that she felt like a fool for coming out alone when she was this pregnant. But she'd thought she was safe enough. She hadn't been diabetic or suffering from hypertension, she'd been careful about her diet and salt intake, her doctor had been watching her diastolic pressure. She was even wearing a constant blood pressure monitor under her p-suit.

"I was amazed Dione knew exactly what was wrong, until she told us there was a complete ob-gyn text loaded into her personal memex that she'd been consulting on and off for months. Not what I'd want to read while I was pregnant, but Dione was something special.

"The only thing we could do was get her straight to Archimedes, so we helped her with her helmet and life support pack and out through the lock. Then Chen picked her up and carried her to the hopper, and I strapped Dione down in the cargo cage, with her lying on her left side because she said that was supposed to improve circulation and blood flow in the kidneys.

"We called ahead once we were high enough to aim the beam, and they steered us down by lidar at the other end, with Chen using a delicate touch on the steering jets. They had a gurney with wire tires waiting by the emergency pad, and rushed her through the hospital lock before Chen had the hopper shut down.

"Dione recovered, but lost her baby. The boy would have been the thirty-seventh child born on the Moon if he'd lived.

"We'd had another loss during the proton storm, a loss that explained why

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the phone link south of Autolycus was down and Dione had to improvise her distress signal.

"Tim Doyle had never reported in, though he'd gone out hours before to repair that line-of-sight relay. They found his body at the base of the relay tower, not ten meters from his vehicle. Apparently he'd fallen from the tower, but the fall hadn't killed him. Nor the radiation storm: given his expected travel time, Doyle had to have died earlier. The autopsy showed asphyxia, but his p-suit passed every test: nobody could explain how it had failed, or if it had failed. Though he'd fallen backward onto his life support pack, which might have interfered with his air supply.

"Melinda took Tim's death harder than I expected. After the way he treated her I thought she'd be relieved, but when I called on her she looked tired, with dark rings around her eyes, and didn't say much when I hugged her and tried to cheer her up. I left wondering if people missed anything they were used to, even somebody as slimy as Doyle.

"What saved her was the daily business of the ag module: planting, constant metering of water and minerals and CO_2 concentration, even a little weeding in spite of the tight quarantine on seeds from Earth, with harvesting and the daily deliveries to keep her from sinking into solitude.

"My later visits to the farm seemed unwelcome, so I stayed away. When I ran into Melinda in Archimedes she'd greet me and go on by, isolated in her gloom.

"Dione Petrakis recovered quicker. I stopped by her room in the hospital a couple of days after we brought her back from Mare Serenitatis. I'd heard of postpartum depression, but she was pretty chipper for a person flat on her back. Dione didn't blame herself for losing the baby because she'd done her level best to monitor her health. But Kostis did.

"Dione and I kept in touch, and she told me enough so I knew the marriage was failing. He began sleeping in the spare room. Then he didn't come home and slept on a cot in his office. Next he asked for a separation, and finally for a divorce.

"Dione was pretty broken up. Though it was a friendly divorce—if divorces ever are. At least she didn't have to keep running into him around Archimedes, because Petrakis bought out of his contract, and was off to Copernicus Base, where he got into water mining futures.

"Dione would have had a lot harder time buying out. She was one in a million, and Lunar Power would most likely have doubled her salary to keep her. No matter how down Dione felt sometimes, she didn't want to leave: she was trying to integrate the whole AI net on a new level, and there was always a new problem to solve. Sometimes I didn't understand half of what she was saying, but I nodded and tried to look intelligent.

"Of course everybody knew about the divorce—the eggheads trying to beat lightspeed ought to study the grapevine, because it spreads news faster than the phone system. About two weeks after Kostis went to Copernicus, Melinda called and asked me to come out to the farm. She sounded pretty tense, so I said I'd be there right after work.

"When I came through her lock, the utility room speaker told me she was in the ag module, and to come right on in. It was dark on Surface, so the ceiling of the module was all purple with growlights. Melinda had to yell to let me know her location, because she was way down at the other end of an aisle between hydroponics tanks.

"I thought she sounded a little drunk, and the first thing Melinda did when I came close was pop me one of the unopened cans from a six-pack of

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Jeff's Best. (Not his best yet, even if it was the only beer on the Moon, though Jeff did pretty good once he stopped calling himself a zymurgist.) We sat down on a crate together, and I found out why she had to get drunk. Melinda wanted to confess.

"Not just to me, but to Dione. It was all her fault the Petrakis' marriage had failed. Because if she hadn't killed Tim the phone link south of Autolycus would have been repaired, and Dione would have been rescued in time and not lost the baby.

"I told Melinda that was nonsense, because nobody could have gotten to Dione, the storm lasted for hours and hours, and it was good luck for her the particle storm was unusually short. And what was this nonsense about murdering Tim anyway? There was no way his suit could have failed.

"So she explained. Those hadn't been ordinary dark rings around her eyes when I saw her afterward, Tim had beaten her up. For the last time, she'd decided. And knew exactly how to do it, because thinking about killing him for so long ended up the same as planning.

"It was slick and simple. She knew Tim plugged into the onboard oxygen supply when he was in their truck or a ComCorp six-wheeler, and only breathed from his life support pack when he went for a walk. What she did was put a used CO_2 scrubber canister back in the pack, but with a new warning indicator inserted so it looked fresh. He wouldn't notice during the half-minute switching between the truck and the six-wheeler, and when he had to depend on the life pack for air he'd be far away from any help. Melinda acted her usual meek self when she saw Tim off. Later she suited up so she could bicycle in to pick up the truck, just as usual.

"'What made things perfect,' she told me, 'was that he fell on his life pack, and squished it just enough to confuse things.'

"But Melinda still wanted to confess, so I talked real fast, reminding her what a bastard Tim had been, how much he deserved to die, that she'd gotten clean away with it. And repeated all I'd said before about what happened to Tim having nothing to do with Dione's losing her baby. Meanwhile we finished the last two cans of Jeff's Best, she set the hydroponics on automatic, and we went back through the lock for another six-pack.

"I slept over, not just because I was too drunk to go Surface, but because I wanted to be there next morning in case I had to talk Melinda out of confessing one more time.

"Lucky I talked her out of it, because soon she needed to consult with Stanley Rosten—"

Fran looked puzzled for a second, then said, "The guy with the East Forty?"

"Right, honey. Only by this time it was so big he called it the Plantation. Then Stanley needed to consult with her, and the next thing we knew he and the Widow Doyle were an item."

"What about Dione Petrakis?"

"Happy ending there too. Next year a young assistant named Hirama came up from Earth. I never thought of Lunar Power as a matchmaker, but they hit it right off, and were married within months, even if he was ten years her junior. A marriage made in heaven, or at least in the Director's office. Maybe it was that they could always talk shop: nobody else could make sense of what Dione did every day.

"So that's my story of the men I knew on the Moon. A good sample anyway."

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"What about Great-Grandpa?"

"That's another story. You already know about him."

"No I don't," Fran said.

"Yes you do. How he courted me by saying he loved me for my mind. And actually meant it. Somebody Earthside once said, 'You can lead a whore to culture, but you can't make her think.'" Helena snorted laughter. "They hadn't met your Great-Grandfather."

"Tell me again."

"Not now, honey. I'm tired, and think I'll listen to something quiet for awhile, then try to sleep. Goodnight, dear."

"Goodnight, Gee-Gee."

The girl looked back as she went out. Helen had lowered her couch to horizontal and darkened the windows, and Fran could barely hear the words the old woman was singing along with the voice on her couch speakers:

Old Bill Jones had a daughter and a son,
Son went to college and the daughter went wrong,
His wife got killed in a poolroom fight,
But still he keeps singing from morning till night.

The chorus didn't make much sense:

—the fiery and snuffy
Are raring to go.

Because just what were the "fiery and snuffy"?

Tie my bones to his back, turn our faces to the west,
And we'll ride the prairie that we love the best.

And what kind of song was that to sing on the Moon? ❍

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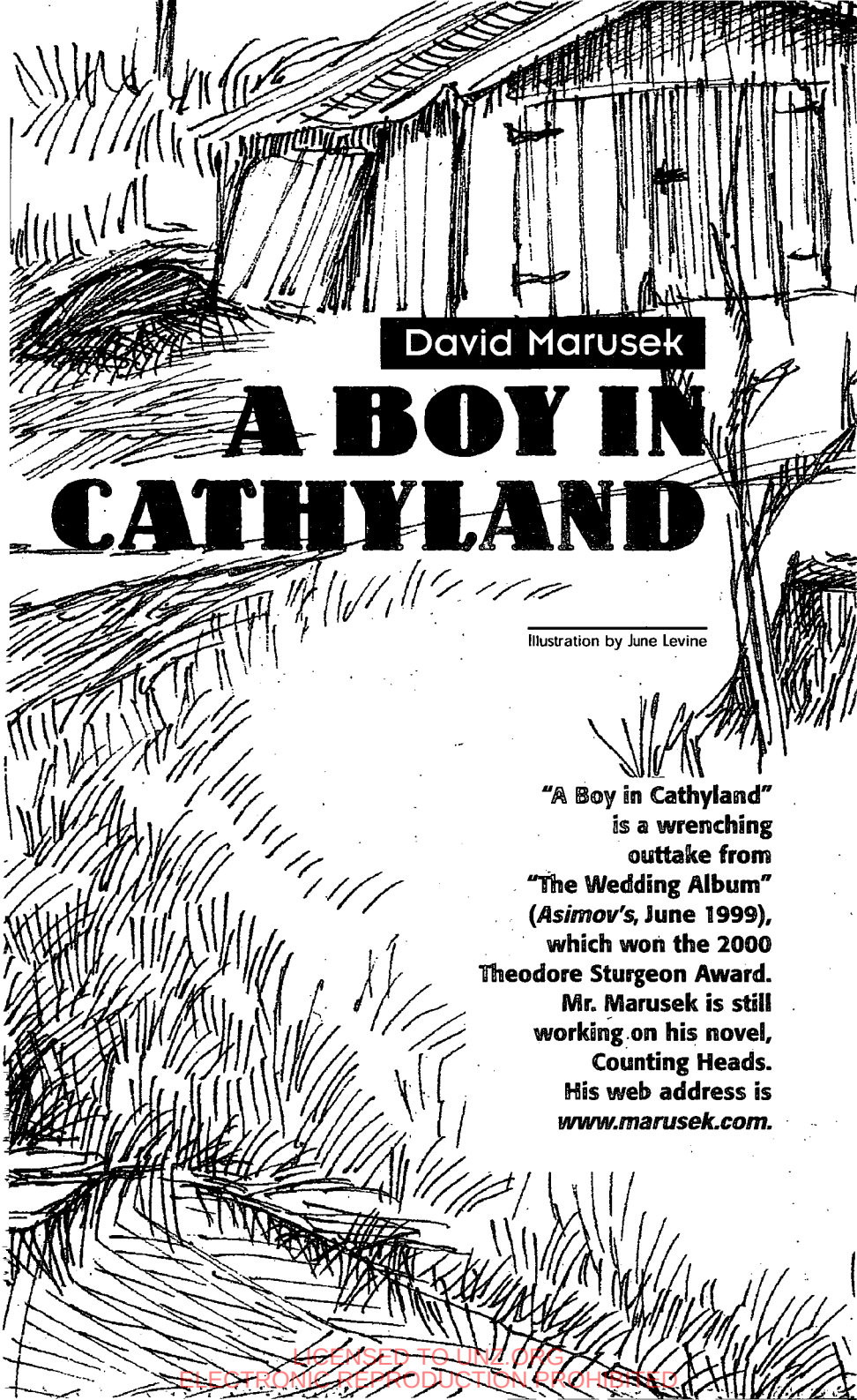

David Marusek

A BOY IN CATHYLAND

Illustration by June Levine

"A Boy in Cathyland" is a wrenching outtake from "The Wedding Album" (*Asimov's*, June 1999), which won the 2000 Theodore Sturgeon Award. Mr. Marusek is still working on his novel, Counting Heads. His web address is *www.marusek.com*.

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For as long as he could remember, the boy had watched such fiery pieces of space junk streak across the southern sky. This one, low on the horizon, would be a fragment of the Rialoto Platform. The Rialoto Platform, or so he'd learned in school, had been like a giant raft floating on the sea of air that surrounded the Earth. It had been many times larger than the village and had supported as many people as lived in Provideniya, the regional capital. But this raft and dozens more like it had been shattered to bits, and every so often a jagged piece or frozen human body would hurtle to Earth like a shooting star. Each time he saw one, Mikol would squeeze his eyes shut—as he did now—and make a desperate wish with all his young heart that once, just one time, a piece would fall somewhere nearby, and he could go examine it with his own two eyes and thus appease the clawing demands of his curiosity.

When he opened his eyes, the tragic debris was gone. No matter, he'd see more before too long. According to his schoolteacher, Mikol would be an old man with a long, grey beard before the last shard fell.

Mikol removed the plastic pail brimming with cool spring water and set the empty one under the pipe. Out of the corner of his eye he noticed movement on the valley floor far below him. There was a cloud of dust on the river road, horsemen riding in loose formation. "Raz, dva, tri," he counted them, "chetyre, p'at', shest'." It was, no doubt, the Patrol. Villagers had been expecting it for weeks, and here it was.

Carefully, so as not to spill the water, Mikol toted two full pails up the narrow bluff path. At the top he called, "Babushka Katia, Patrul' idet!" But she was bent over a hoe and paid him no mind. He looked down the valley again and saw that the riders, small as gnats, had turned onto the track that mounted the ridge. This cabin would be their first stop. They would arrive in a couple of hours.

"Babushka Katia," he called again as he threaded his way through the garden maze of cabbages and kohlrabi, potatoes and beets. "Patrul'," he said, placing the pails at her feet.

Cathy straightened her back and consulted the sun's position in the sky. Patrol or no Patrol, the garden was thirsty. "Esche vody," she said, handing the boy two empty pails and two pebbles. He was a good boy and a tireless helper, and she paid him in carrots. Four pebbles to the carrot, redeemable whenever he decided to quit for the day and go home. He dropped the pebbles into his pocket and hurried off with the empty pails.

Over the last ten years, subsistence had become Cathy's full-time occupation. The garden, once a hobby, had become the cornerstone of her survival. As luck would have it, she had received a shipment of Denali seeds just before the world went all to hell. They were hybrid seeds, especially genginеered for the cold soil of the subarctic. During the short summer, when the sun hung on the horizon continuously day and night, these seeds exploded with growth. And the vegetables they produced kept well throughout the long winter in her root cellar beneath the cabin floor.

The villagers—to whom she was and would always be a foreigner—were greatly impressed by the bounty and hardiness of her harvests. In exchange for seed stock, they eagerly helped her extend her garden to the forest edge and beyond. They felled trees and pulled stumps, hauled wagonloads of manure, wood ash, and river soil up the ridge to tame her raw earth.

Now she had a half-hectare under cultivation. She bartered her surplus

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for losos'—sliced into narrow strips and smoked over alder until the meat was as hard and pellucid as wax—and for snowshoe hare and rock grouse. She bartered for thread and fur, tea, sugar, home-distilled vodka, and all the little necessities that brought joy to a solitary life.

Still, she was old—almost two hundred—and without periodic treatment, her strong body was beginning to fail. Soon, while she was still able, she would have to cross the mountains to the crazy world beyond in order to partake in the blessings of geriatric medicine.

When the dumification patrol arrived, Cathy ordered Mikol home, but instead the boy hid in the thick willow brush at the forest edge. The soldiers sat their horses while their officer dismounted and stood under the sunflowers that lined the garden path. He was a handsome young man with the blunt features and reddish skin of the local population. He wore shiny, black riding boots and a brown republican uniform. "Zdravstvuite," he called politely to Cathy as she hauled a bundle of weeds to the fire pit. When she turned to him, he smiled and nodded his head. "Razreshite nam pozhaluista, delat' osmotr vashei vysokoi tekhniki."

"No problem," Cathy said and left the garden. The young officer's polite request was a pleasant formality, she knew, and in no way necessary. They would inspect her property whether she granted them permission or not. She skirted the men and their horses—there was a dog, too, a German shepherd—and led the officer to the khizhina where she kept her fusion generator. It was the camping model she had brought with her fifteen years ago when she'd bought this place. It put out five kilowatts, more than enough to power her modest life-style: an electric stove, lights, a radio. The officer gave it hardly a glance.

"Mozhet byt' vy menia ne ponimaete," he said, searching her face for signs of cleverness. "Nas interesuet vysokaia tekhnika—*hi-tech.*"

Oh, she knew exactly what kind of tech they were after. The smart kind. The willful kind. The kind she had dazzled the villagers with when she'd first arrived. The kind that had briefly conquered the world. The officer went to the door of her cabin and waited for her. "Mozhno?" he said.

"Of course," she said and opened it for him. As she did so, her hand trembled, which surprised her. She knew what she was risking here, but she'd made up her mind a long time ago. And she'd rehearsed for this inspection, even practicing her answers in front of the mirror. This was no time to grow feeble-hearted.

The officer waved for his men to dismount. Two joined them in the cabin, while the others searched the grounds and outbuildings. Their manner was respectful but thorough. They opened all her cupboards and drawers, moved furniture, tapped floor and walls for hollow places, discovered and searched the root cellar. One soldier poked the wand of a sniffer into narrow spaces and sampled the air by squeezing a rubber bulb. "Ogo!" Cathy said, pointing to the sniffer. "Armii razreshena *hi-tech*."

"Eto ne *hi-tech*," said the soldier patiently, as he undoubtedly had hundreds of times before. He opened the back of the device's handle to expose its electronics. Old-fashioned tin solder flashed in the light. Silicon chips sat like spiders on a printed circuit board. The plastic case was embossed with Chinese characters. "Smotrite," he said, "nizkai tekhnika—*lo-tech*."

"I see," said Cathy, following her careful script. "Vas interesuet elektrokhimicheskaia pasta. Why didn't you say so? Idite za mnoi." She led them

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outside to the scarecrow guarding the north side of the garden. All of the soldiers followed. "Vot moia *hi-tech,*" she said.

The men laughed, for indeed the scarecrow was hi-tech. It had holo emitters for eyes and a satellite dish for a hat, wore an all-weather jacket, sensi-tread shoes, and a belt valet. She had decked it out with all her smart appliances after smashing their processors and breaking open their paste capsules.

"Eto dolzhno byt' samoe umnoe chuchelo, kotoroe ia videl," said the officer, but Cathy could tell he wasn't entirely satisfied. In the village, they would have told him about her houseputer and its thousands of simulacra—a whole virtual community of Artificial People who had once occupied her property and shared her life. Her Cathyland. The villagers would remember Cathyland.

So she consulted her mental script and said, "Vam nraviatsia moi aniutiny glazki?" She pointed toward the flowers on the picnic table.

"Krasivo," the officer said and went for a closer look, not at the flowers, but at the flower pots. They were made from houseputer containers, each originally designed to hold a liter of electro-neural paste. Now they contained garden dirt and hybrid pansies. There were three of them. The villagers would have reported three. "Krasivo," the officer repeated. He ordered his men to mount up. He thanked her for her cooperation.

"Ne za chto," she replied graciously.

When they were ready to leave, the handler called his dog, but it was nowhere to be seen. He whistled, and the dog whined from around the cabin. The soldiers dismounted, and Cathy followed them to where the dog was pawing through her compost pile.

"Bad dog! Make him stop!" she said. "Kakoe bezobrazie!" The dog ignored her and eagerly dug into the rotting compost.

The dog's handler leashed him and tried to pull him away, but the animal snuffled stubbornly at the pile. "Izvinite," the officer said to Cathy. "Moi soldaty uberut eto." But instead of ordering his men to clean up the dog's mess, he nodded to the soldier with the sniffer.

The soldier plunged the wand deep into the compost pile and squeezed the bulb. In a moment the results appeared on the display. "Nichego net," he announced, and Cathy tried to mask her relief.

"You should try to feed your dog better," she grumbled and bent to gather up the scattered compost.

The officer watched her for a long while. Finally, he ordered a man to go to the horses for a spade. The soldier returned with a camp spade which he unfolded and used to scrape away the compost pile. It was slow going, and the soldier began to sweat. With the compost removed, the soldier glanced at the officer. The officer nodded, and the soldier began to dig. When he had dug a hole a half-meter deep, he looked again at the officer. The camp spade was ill-suited for major excavation, and his hands were beginning to blister.

Too late Cathy realized that she had watched every spadeful of dirt being removed, while the officer had been watching her. She had shown too much interest. She should have offered to go into the cabin to prepare them something cool to drink. "Glubzhe," said the officer, and the soldier continued to dig.

Even now it was not too late. Even now Cathy could surrender the contraband and save her own life. They would punish her, but they would have to let her live. That was their law. The soldier in the growing pit paused to

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ease his back. And though Cathy stood directly in front of him, his eyes avoided her. He bent to his labor again, and the dirt continued to fly.

They found the containers at one-and-a-half meters, brought them up, and pried open the lids. The paste glittered in the sunlight, revealing the nebular craze of trillions of neural synapses. The soldiers gaped at the sight, and Cathy thought, "Now here's the test." Would these underpaid recruits of a distant government hold fast to duty? Or would they be swayed by greed? She did not doubt that they had destroyed plenty of microcapsules of paste during their rambling patrol of the province, but here was *three liters* of the stuff. Even reprocessed, this haul could make them all as rich as czars. Surely there was a black market for *hi-tech*. Surely there were rich madmen eager to posses Artificial People again no matter the international ban. Already the soldiers were passing secret glances behind their officer's back.

Not that the fate of Cathy's simulacra could make much difference now: her own fate had been sealed the moment they'd unearthed the containers. She turned and searched the willow brush behind her yard for Mikol. The boy had best not become a witness. She prayed that he had left for home.

A soldier unsheathed his knife. Followed by a second soldier, and a third. But it wasn't mutiny. They plunged their blades into the containers and stirred the paste. They could not be as rich as czars, for where could soldiers spend such wealth? They poured the paste out on the ground and scraped it from the sides of the containers. "I'm sorry," Cathy thought as a soldier doused the puddle with gasoline. "I tried. I'm sorry. Good-bye." The burning paste sizzled and gave off thick, black smoke.

The officer assembled his men in a line facing Cathy. He read something from a card in a faltering voice. Clearly he did not relish this part of his duty, and for that Cathy pitied him. She looked one last time at her little cabin. She heard a breeze moving through the tops of the tall spruce trees.

Mikol, hidden in dense foliage, did not flinch. On the contrary, he watched steadfastly, for he knew he would be asked many times in his life to relate this very scene in all its detail. The innostranka did not cry for mercy but waited bravely. The lieutenant pointed the gun into her ear. It made a little popping sound, not the big boom Mikol had expected. She fell immediately but scrabbled on the ground a bit. The soldiers left her for the villagers to bury. They mounted their horses and headed up the ridge road to the next homestead.

And thus a heavy responsibility befell the boy. He must run home and tell his people of the tragedy before news of it spread. A treasure lay unclaimed in neatly cultivated rows, and he had worked too hard for it to end up in some other family's soup pot. When Mikol was sure the soldiers were gone, he left his hiding place, but he did not start for home at once. First he went into the now vacant cabin and pulled from a shelf the tin can in which he knew the innostranka kept a handful of coins. He took these and replaced them with the dozen pebbles he had earned that morning. He left the cabin, but still he did not start for home. First he went around to look at her where she had fallen, to see up close with his own two eyes where the bullet went in and where it came out. And maybe to touch it with a stick. Just once. O

—Russian translation by Trina Mamoon

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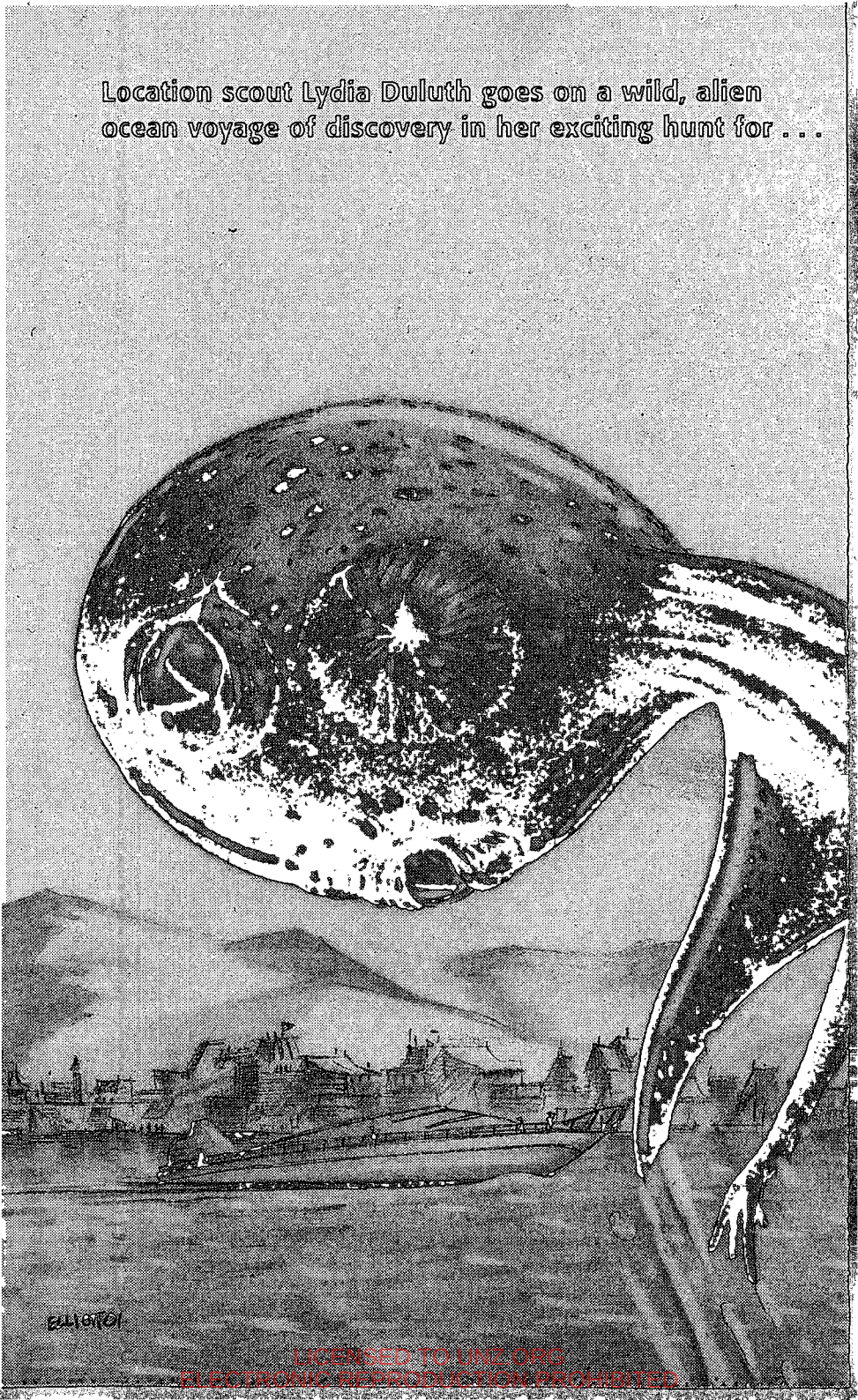
Location scout Lydia Duluth goes on a wild, alien ocean voyage of discovery in her exciting hunt for . . .



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MOBY QUILT

Eleanor Arnason

Illustration by Darryl Elliott

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Later on, Lydia Duluth referred to this adventure as "Moby Quilt," though the animal in question was not named Moby, and there was no one on the ship like Ahab. It began on Newtucket, an Earth-normal world orbiting a gas giant. The system's star was smaller and cooler than Sol, and the giant's average distance from its primary was about one AU. As a result, Newtucket existed in an ice age that ebbed and flowed, but never ended. Glaciers covered most of the land, and life was almost all in the ocean, floating in chilly surface waters, rooted in cold shallows or clustered at the edges of boiling deep-sea vents. These last were common. The giant's tidal pull, and that of its other moons, kept Newtucket active.

As Lydia climbed from the spaceport cab, she saw a volcano on an offshore island, its plume trailing into the deep blue sky. Newtucket's primary floated above the plume: a crescent softly banded in tan and pink. The crescent was large enough to be impressive, though Lydia had seen larger giants in the skies of other moons. Most of those moons no longer rotated, and many had been sterilized by their giant's radiation. Newtucket was far enough out from its primary to be habitable and to have a day that was only slightly longer than Earth standard. Some grandeur had been lost through distance. One should not complain. This was still a pretty world, with potential for drama.

The volcano might erupt, for example; or a story's hero might be chained to a rock, as one of Newtucket's high tides rolled in, rising—how many meters? Twenty? Thirty?

She slung the satchel holding her recorder over one shoulder, picked up her bag, and walked into the waterfront hotel. Whenever possible, she stayed in sight of an ocean. It must have to do with her childhood, spent on the broad inland plains of a distant planet.

The desk clerk was human. "Do you really work for Stellar Harvest?" he asked, as he processed her reservation.

Of course she did. It said so right on his screen. Lydia nodded.

"Do you know Wazati Tloo?"

The company's rising star. Lydia had discovered him, but was not about to admit this to a fan.

"I'm in love with Tloo," the clerk went on. "So handsome! So masculine! That golden skin! That mane of dark red hair!"

It wasn't hair, actually, but a crest of feathers.

"I've activated your key, Miss Duluth. The elevator's at the end of the hall. Your room is no smoking, with a view of the harbor. Have a nice visit in scenic Newtucket Town."

Lydia thanked him and rode up to a generic human hotel room, made familiar by years of travel among the stars. She unpacked, showered, put on new clothes, and went onto her balcony. As promised, it overlooked the harbor. In the distance, the volcanic island smoked, its icy shoulders gleaming in the afternoon sunlight. A few boats were tied to the docks. In the middle of the harbor was a sleek, white vessel, bristling with instrumentation. This was her destination: the research ship *Persistent.*

She leaned on the balcony's railing, enjoying the view. Somewhere out there, most likely beyond the breakwater, was her personal reason for coming to this world: a fifteen meter long marine creature from another star system. Like Lydia, K'r'x was intelligent, and like her, he had an AI woven into his nervous system. This, combined with the radios used for ordinary communication between his species and humanity, ought to mean that she

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could speak to him directly, mind-to-mind. This kind of closeness with a human would be embarrassing and disturbing. But an ocean predator with five eyes and a multitude of tentacles could hardly sit in judgment on her. For one thing, he was physically incapable of sitting.

Remember, her AI said. *Your conversation will be mediated by two AIs. This will not be a duet, but rather a quartet.*

You're getting metaphoric, Lydia thought.

That is your influence. We're too closely connected. I am not the AI I used to be.

She thought she caught a hint of humor, but this was hardly likely. The AIs were a notoriously humorless crew.

She got her recorder and panned the harbor. By leaning off one end of the balcony, she could record the town as well. Concrete buildings with metal roofs climbed a steep hill. Beyond them rose a range of mountains, black stone peaks streaked white with ice and snow. One mountain smoked a little, its thin plume half-veiling the amber-yellow sun.

A very pretty world. After a while, she pulled on a jacket and went out for a walk. In many ways, this was her favorite part of any journey: wandering alone with her recorder over one shoulder. The cold air had a tangy, unfamiliar scent, and the gravity was light compared to the last world she'd been on. Her step felt bouncy. The fatigue of a long trip fell away.

There were racks near the harbor. The local sea life hung from them: long red streamers that faded as they dried. Like most of the animal life on this planet, they were flat and almost featureless, except for grooves that made them look quilted. The creatures here were no wider than her arm and maybe twice as long. Out in the ocean were huge, rectangular mats that measured ten thousand square meters. Like their small relatives, they were grooved. Unlike their relatives, they were not harvested. The *Persistent* was going out to study the mats. Lydia was going along.

She had dinner in a waterfront café. The tide was coming in. The docks, which had looked ridiculously tall, looked ordinary now, and more boats were tied up. One was unloading. A crane lifted a net full of red sea ribbons into air. Lydia recorded the scene, getting the giant's crescent above the black, angular crane. Years of working for Stellar Harvest had given her a pretty good eye.

She was on a final cup of decaf coffee when someone stopped at her table. "Lydia Duluth?"

Looking up, Lydia saw a broad, strong-looking human woman with dark brown skin. Her bright blue hair was cropped short. Her eyes were topaz-yellow. "Yes?"

The woman held out a hand. "I'm Jez Bombay, captain of the *Persistent*."

They shook. Lydia gestured. The captain sat down. "We're leaving tomorrow on the tide, which means you should be on board by noon."

Lydia nodded. A human wait came over; Captain Bombay ordered a beer.

"Where is K'r'x?" Lydia asked.

"Beyond the breakwater. He says the harbor tastes funny and is far too noisy. All these engines! A squid can't hear himself think."

"He isn't a squid," Lydia observed.

Jez nodded. "But there is a similarity—superficial, I will grant you, and his name for his people can't be said by humans."

Deep Divers, they called themselves. Fast Swimmers. The Great-Eyed. Those of Many Grasping Tentacles.

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Why are you so interested in this creature? her AI asked.

The Divers may not be the strangest intelligent life humanity has ever met, Lydia thought in reply. But beyond question, they are *different*.

The captain drank her beer; she and Lydia chatted about Stellar Harvest. It was the inevitable conversation. Did she know Wazati Tloo? Had she known the legendary Ali Khan, now retired and growing roses on Earth? What was Cy Melbourne really like?

Actually, it was easy to talk about all three. Tloo was a dear, sweet fellow with the looks of a bodhisattva and the brains of a brick. Ali Khan—a gentle, intelligent man of awesome physical ability—had been a pleasure to know. Cy was less likable, due to his fondness for practical jokes; but he got the job done and didn't screw his fellow workers over, most likely because he'd come up through the ranks, starting as a stunter. Still and all, this was a conversation about phantoms. The people that fascinated Jez Bombay did not exist, were figures made of light. The people Lydia knew—gentle Ali, naïve Tloo, and crude Cy—were something else entirely.

They parted finally. Lydia walked back to the hotel.

In the morning, she packed, left the hotel, and found a watercab that took her to the *Persistent*. The ship was fifty meters long, with a knife-thin prow and two massive engines. She couldn't see the engines, but she'd read a description, and the twin screws were visible as the cab came around the stern, sunlight slanting through the water to light their thick shafts and broad, thick blades.

A crew member helped her on board and led her to a cabin. It looked oddly like her hotel room of the night before. Smaller and more cramped, with no balcony, and a circular window, but otherwise—

"Why are the windows on ships circular?" she asked.

"A better seal," the sailor answered. "Windows leak at their corners. Also tradition. Portholes have always been round."

Lydia unpacked for the second time in two days, then went up on deck. It was a little before noon. She could hear the engines starting up, a deep thrum rising from below. She walked forward to the knife-prow and leaned over. The water was clear and blue. A sea-ribbon swam just under the surface, undulations moving through its long, flat, rust-brown body.

Buddha, she felt good!

A little past noon, the anchor came up, pulled by an automatic winch, with a sailor standing by and watching. Lydia kept out of the way. The engine's sound changed. The *Persistent* backed first, then turned and headed out. Lydia recorded the harbor, the town, the island volcano, its plume pulled into a diagonal by the wind.

A narrow channel, marked with buoys, led past the breakwater. Waves foamed and crested beyond.

"I am Too Ziri," a person said, coming up next to Lydia. She was slender, with a golden skin and brown hair—no, these were feathers—ruffled by the wind.

Clearly, she was the same species as Wazati Tloo, though her clothing was human: yellow waterproof boots, black pants, and a bright blue anorak. "You are Lydia Duluth."

Lydia hesitated, then nodded.

"Don't worry. Those of us who are progressive have forgiven you for helping Wazati Tloo escape our home planet, and his exploits in drama have shown us anything is possible. I'm here on this world because of Tloo in his

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first starring role, *Star Dump*. He made a fine heroic convict, unjustly condemned to life in the dump and fighting for his freedom. Seeing that, I knew I could, and would, escape my culture, and here I am, a scientist on a human research ship."

"You saw *Star Dump* on your home world?" Lydia asked.

"No. It was banned there, as you ought to know. I was off-planet, studying the theory of inter-species communication at a human institution of higher learning. After I saw *Dump,* I knew I would not go home. Here is the radio we use for communication with K'r'x."

It was an ordinary, old-fashioned headset, held on by tension.

"K'r'x has a radio connected to his AI, as you do not, I understand. The AI translates his thoughts into humanish and broadcasts the translation to us. We receive the messages on a radio like this one, though ours have ear plugs and a mike. We have modified this one, so your AI can plug directly into it. The mike and ear plugs have been removed, since you are going to be talking mind-to-mind. I have to say, I envy you! But not enough to ask for an AI inside my skull."

I am not sure that she could get one. We are selective. Though she does seem to be an avant guardist, and that is what we're interested in.

"Where is he?" Lydia asked. The ship was rocking a little now, as it plunged through the foaming water. Was she going to be seasick? At the moment she did not know.

"There," said Ziri and pointed.

He was pacing them: a long, pale body just below the waves, breaking the surface now and then. Lydia saw a sleek, wet back. A fin lifted into view, triangular and very large, almost as long as his body at its base. K'r'x dove.

Shortly thereafter, he rose again. She caught sight of the tentacles that ringed his mouth. They were not made formidable by suckers, but by spines and hooks. Two, she knew, ended in clusters of small, agile, subsidiary tentacles that could be used as hands.

His head was bulbous. Two of the five eyes were in front, giving him stereoscopic vision. Two more were on the sides. They were huge, with v-shaped pupils. As well as watching to the left and right, they looked down. In the inky deeps where his people hunted, these were the most effective eyes. One last eye, the smallest, was on the back of his head, where the head sloped toward his torpedo-shaped body. Nothing snuck up on a Diver from behind.

K'r'x dove again.

Ziri handed the radio to Lydia. "I'm certain you want to talk with him."

"In a moment," Lydia said.

K'r'x surfaced again. This time she saw one of the huge side-eyes, its pupil narrowed at the moment. The iris was silver-grey, a good match for the body, pale grey and speckled like a trout.

The mouth was another difference from squid. It was a circle of triangular plates, which muscles forced together. The plates were edged with teeth, and there were more teeth in the Diver's throat. Much of its native food was armored. The plate teeth sheared through armor, while the throat teeth crushed it; then the Diver's tongue—long, delicate, and sensitive—extracted the inner animal from its broken shell.

Your interest in this creature is disturbing, her AI said.

I'm a romantic, Lydia thought. This is a romantic being.

"Do you need help?" Ziri asked. She took the headset and pressed it. A transparent, glassy wire came out the middle. "The socket for your comput-

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er is at the top of your skull, I understand. Just push the wire in and snug the set to your head. You will be in communication."

Lydia did as instructed. The ship vanished, and she seemed to be in a maze of glass, light shining through it, refracting and reflecting. An AI operating system: she recognized it from past encounters. Programs—transparent, colorless, as flexible as fish—moved through the crystal maze. None of this was real, of course. Rather, it was a metaphor, a way of understanding something that was outside human experience, beyond human comprehension. In spite of what she saw and felt, Lydia was still on the ship's deck, staring at the ocean.

Something approached her. Huge, dark, and apparently solid, it was nothing like anything she'd ever seen in an AI. It pushed through the walls of crystal, the angular rays of light, as if both were insubstantial, as they in fact were.

For a moment, as the great dark body loomed over her, Lydia panicked. She reached to remove the radio set. The thing engulfed her.

Aha! I have seized you! You are eaten! You are mine!

K'r'x?

Yes. Are you armored? Is there anything I need to crush? Or can I merely tongue?

Try tonguing first, Lydia thought.

The crystal maze vanished. Lydia was back on the ship, which she had never left, still leaning on the railing. K'r'x surfaced again, a tentacle rising well into air. It ended in a group of formidable-looking spines.

"He's waving," said Ziri and waved back.

Lydia could feel him inside her head, an unfamiliar something that moved among her thoughts. At times—it was the damnedest sensation—it seemed as if a thought had been hooked or grabbed. A passing idea—*my, the water is clear—Buddha, this situation is scary*—would suddenly jerk, twist, and be gone.

Could you be less intrusive? Lydia asked.

I am a predator, K'r'x replied. *But I will try.*

The sense of strangeness diminished.

I thought you were going to mediate this, Lydia said to the AI.

He has a surprisingly strong mind, and his AI seems to be willing to let him have his way. There is always the danger of contamination, when one coexists so closely with an intelligent life form.

You are lovely, said K'r'x. *Like a grove of seaweed or a school of fish. What ideas you have! So quick and flexible! So deeply rooted and delicately branching! I mated many times before I left my home planet, but I never felt anything like this. I wonder what kinds of minds the women of my species have? What would it be like, if we could touch each other so deeply?*

The females of his species were larger than the males; Lydia saw one, as K'r'x remembered. A gigantic, pale torpedo swimming through sunlit water, her eyes golden, her skin tawny. To K'r'x she was lovely. Their courtship began as a chase, the quicker male darting around his huge and graceful hoped-for mate, touching her lightly, then speeding away, as she struck out—not angry with the male, but flirting.

At last, the female slowed; the chase became a dance with twisting tentacles and undulating fins. As the dance continued, the female's skin grew flushed, and Lydia thought she could feel heat in her own body. Was she feeling K'r'x's memory of his own flushed skin? The dancers met. Their ten-

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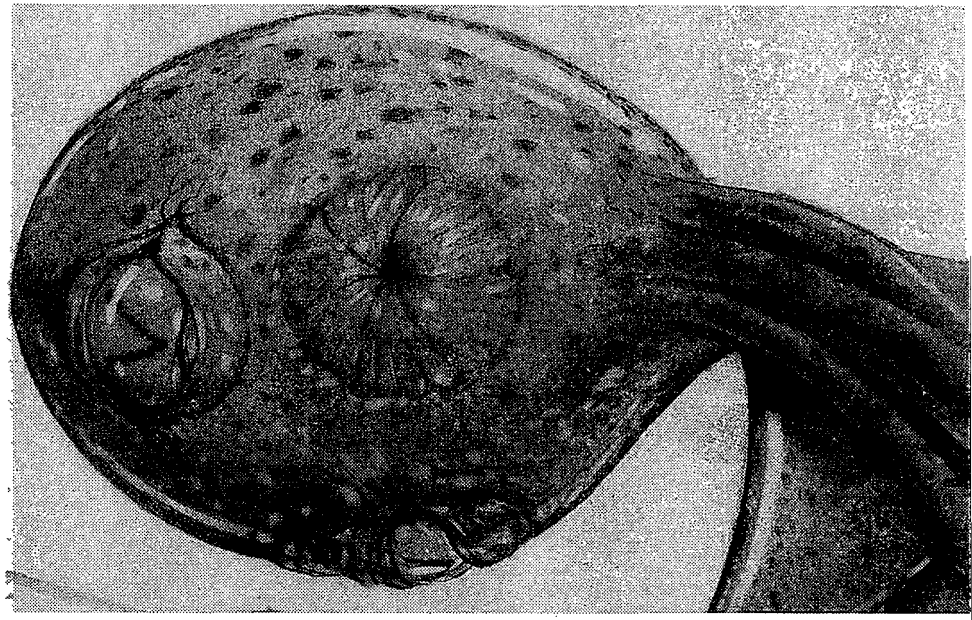

tacles wound together. Dangerous mouths open, they intertwined their tongues. A deep hum like the sound of engines seemed to fill Lydia's ears and throat: K'r'x and his mate singing. It was, she had to admit, wonderfully—and embarrassingly—erotic.

K'r'x stroked the female, then reached back with one of his handed tentacles to where his sperm was being extruded as a gelatinous blob. Taking hold of the blob gently, he brought it to his mate's semen-receiving duct and inserted it, while continuing to stroke and sing.

"Are you all right?" asked Ziri.

Lydia glanced around, suddenly remembering where she was. "Why?"

"You are groaning."

"I'm fine," Lydia said, then added in a thought to K'r'x, This has to stop. I can't be having this kind of response in public.

Are you not enjoying the memory? Do you have a problem with sex? Let me attempt to mediate, the AI said.

The sense of the Diver's presence decreased, as if something—distance or a pane of glass—had been put between him and Lydia. She pulled the headset down, so it hung around her neck, then exhaled. "Buddha! What an experience!"

"What happened?" Ziri asked.

"First he ate me, then we had sex. Oy gevalt!"

"Are you sure you understood? There was not a problem with communication?"

"I think not," said Lydia. She rubbed her neck under the headset's band. In spite of the cold wind, she was sweating, and she noticed suddenly that the headset's ends had joined together, making a collar. She tugged. The collar wouldn't open.

"Press here," said Ziri and demonstrated. The headset unlocked. "This

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function makes it difficult to lose the radio. They're expensive, and in bad weather anything that isn't fastened will go overboard."

A remarkable creature, her AI said. *If you put the headset back on, I will attempt to communicate with his AI.*

Not now, Lydia thought. In the water next to the *Persistent,* K'r'x surfaced again, this time waving a tentacle armed with hooks. "How did anyone figure out his species was intelligent?"

"Their kindergartens," Ziri answered.

"What?"

"It's an ancient human word, meaning a garden for children. The Diver children are small when born, no longer than my hand. They can swim and feed, but they are not intelligent. As you might imagine, they are vulnerable. Their parents build an artificial reef by arranging rocks in a circle on a 'nursery bottom,' a broad expanse of sand. Then the parents place sessile animals on the reef, along with plants that attract specific kinds of fish—small ones, which the Diver young can hunt in safety. Seaweed is planted in the center of the reef, and the Diver mothers attach their eggs to the seaweed. When the eggs hatch, the young find themselves in a garden. Their parents surround the garden, floating above and around it, making sure that nothing dangerous is able to enter."

How sweet, Lydia thought.

"When human explorers came to the Diver home planet, they took one look at the gardens and knew—or at least suspected—they were the work of thinking beings."

"Why is he on this world?" she asked Ziri. "Why does he have an AI?" The headset had reclosed. She didn't want to unlock it, feeling reluctant to put it on.

"He wanted to travel," Ziri said. "When one is fifteen meters long and aquatic, a journey to the stars is not easy. The AIs agreed to help him, if he would agree to an observer. Since they control FTL, it was easy for them to bring him first to the school where I studied, then here."

"What does he eat?" Lydia asked, remembering that the life on this world did not nourish humans. The sea-ribbons she'd seen drying were not eaten, but ground up and used to enrich the soil of greenhouses.

"His bio-chemistry is oddly similar to that of humans."

"You don't feed him vegetables from the greenhouses?"

"The human colonists are trying to introduce fish in protected fjords. We modified his enzymes, and now he is able to eat those fish. Though what he wants, K'r'x has told us, is armored fish, large and crunchy, able to swim fast enough to give him a good hunt."

Lydia went to her cabin, lay on the bed, took a deep breath, unlocked the headset, and plugged it in.

For a moment, she was in the crystal maze. Then she was in the ocean, blue water rushing past her and through the two tubes that went the length of her body, bringing oxygen to her gills, taking waste away. Her—his—dangerous mouth was open, the delicate tongue tasting for food. There was only the flavor of sea ribbons and mats, foreign and unpleasant.

You are back, K'r'x said. *Have I eaten you again? I feel as if you're inside me.*

Why did you want to travel? Lydia asked.

We do not travel among the stars. We know only what other species tell us. I wanted to taste alien waters, rise into alien sunlight, dive into the blackness

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of alien deeps, eat creatures that never swam in my planet's ocean, and mate in ways new to my species.

His tentacles were rolled up around his head, she noticed. His broad fins beat strongly. Muscle contractions forced water through and out his breathing-and-excreting tubes, driving him forward. What a remarkable creature!

Do you know where we're going? she asked.

In search of one of those untasty mat animals. I do this to be obliging, but I think the humans on the ship are fools. The mats can't be eaten or fucked or talked to. Why bother? He dove, taking her down into blue shadows. Searibbons wriggled around them. K'r'x snapped one up, then spat it out. The pieces wriggled away.

Now she heard a second voice, her AI: *His observer says the Divers' language is so different from humanish that it can't be translated. The AI sends experiences in code to the computer that is inside every ordinary headset, and this computer—a human machine, not one of us—turns the code into words. But your headset does not have a human computer. I am supposed to serve the same purpose. I have failed. I am giving you experiences, not words.*

K'r'x dove deeper. They were skimming over a forest of sessile ribbons. Mouth open, he and Lydia tasted a multitude of strange excretions.

This is not excrement, K'r'x said. *But communication.*

You said it was impossible to talk with the life here, Lydia thought.

This is not language, but the messages that life forms without intelligence send. Everything in this ocean is related; everything communicates; but they say nothing to which we can respond.

Lydia took off the headset and dozed for a while, having bad dreams. Finally, she woke fully, rose, showered, put on new clothes, and went back on deck.

The giant's crescent hung in the sky. A spark glowed beside it, almost certainly a moon. Around the pair were high, thin clouds, the kind named mayor's tails. Why would a mayor—a human official, still existing on some planets—have a tail? Lydia went to the prow and let wind blow past her, while she recorded sky and ocean.

Bright yellow disks floated in the water, just below the surface. Their size varied between a meter and a tenth of a meter; their grooves were radial, so they looked like finely cut pies. More local life.

A man appeared next to Lydia: tall, broad and black, with black hair that hung in ringlets to his shoulders and a wide, curly beard streaked with grey. His face was one of those odd throwbacks to a previous stage of human history. It belonged in ancient Persia: the eyes large and fringed with long lashes, the nose curved, the lips full. Lydia could imagine him in Persepolis, dressed in a robe, bringing prisoners and gifts to the king of kings. Instead, he was on the *Persistent,* wearing navy waterproof pants and a bright red anorak.

"I am Dr. Johannesburg," he said, holding out a hand. "The senior scientist on board."

They shook, and he gestured toward the yellow disks. "If you turned one of those over, you'd discover that the ventral side is pitted with holes. The holes are lined with cilia. Microorganisms are driven in and dissolved with enzymes. The animal—the local name for them is 'coaster'—absorbs whatever is useful. The remainder is driven out."

"Why do they have many mouths, instead of one?"

He shrugged. "The life here relies on repetition; since this world is full of life, we can conclude that the strategy works."

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"These aren't the mats you want to study," Lydia said.

"Heavens, no! Though they're interesting in their own right. The problem with all large animals is how to increase surface area. On Earth, and on many Earth-normal planets, the strategy has been to create inner surfaces: lungs, guts, and so on. We and our relatives are tubes. Nutrients go in one end. Waste comes out the other." He paused.

"The animals of this planet use another strategy. Rather than becoming tubes, they have become quilted sheets. The result is structural simplicity. But there is nothing simple about their chemistry. Even the ribbons produce a remarkable array of organic chemicals. Mind you, all life—true life, able to maintain itself and reproduce—is chemically complex. Do you have any idea of the number of enzymes a bacterium must use in order to repair its DNA?"

"No," said Lydia, afraid that the doctor was going to tell her.

Instead, he leaned on the railing and looked down at the disks. A school of rust-brown ribbons had joined them, fluttering between and under. At most, the ribbons were two hundred centimeters long, but easy to see in the wonderfully transparent water. "The chemistry of these animals seems unusually complex to me; possibly because I don't understand it. We haven't had the time to study any world as thoroughly as we have studied Earth. As a result, much of our work is still taxonomy. We are merely listing the kinds of life we find and making guesses about how they are related. I intend to do more."

Lydia recorded the disks and ribbons, then excused herself and walked to the stern. For a while, she stood watching the waves, which were cresting gently, producing almost no foam. The sky was empty except for clouds, the giant, and Newtucket's sun.

Where this world's land was not covered with ice, there was some vegetation: low red and brown plants, none of them with leaves. Many kinds of small ribbons lived in the soil like worms; a few animals had developed legs, one pair to each segment, and could walk atop the soil. But nothing in this world flew.

She went inside finally, got out her computer and input comments on the world, not much as yet. It was early days. Then she wrote a letter to Wazati Casoon, the holo star's twin brother, who was also his agent. She had developed a friendship with Cas. Since he was a eunuch, the hormones that so often confused Tloo's mental processes did not trouble him. He was a clear-thinking, businesslike being, who kept her up-to-date on studio gossip. Every field worker needed an informant in the home office. It reduced the chances of an unpleasant surprise.

That done, she went to dinner, which took place in a lounge overlooking the stern. The sun was going down as she walked in. Golden light slanted through the lounge's windows. For a moment, she was dazzled, then she saw Dr. Johannesburg. He waved her to a table where he sat with Captain Bombay and a handsome brown woman with frizzy yellow hair, fastened with a clip at the back of her neck. Beyond the clip, the hair expanded into a wide, bristly tail that ought to belong to a comet. "This is Dr. Diop," Dr. Johannesburg said. "She's a taxonomist."

Dr. Diop smiled briefly. "Doubtless you have heard Dr. J's opinion of taxonomy. He believes that life can be explained through reduction. To him, an animal is a bag of chemicals."

"On this world, yes," Dr. Johannesburg said in a good-humored tone.

Oh good, thought Lydia. A dinner table discussion of the comparative merits of taxonomy and biochemistry!

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But the captain asked, "How do you like K'r'x?"

"An amazing being."

"He's complaining about you already," Dr. Diop said. "You are ignoring him. He wants conversation. He wants to eat and be eaten."

"It's not an easy experience," Lydia said.

"We have to keep him happy," said Dr. Diop. "He collects specimens for me, and Dr. Johannesburg is planning to use him to study the mats."

Dr. Johannesburg said, "We are planning to have him swim under the mats and record their ventral surfaces; external structures—if any—should be there, and he will take tissue samples. We know nothing about these creatures except for satellite pictures, which show them migrating slowly north and south in ocean currents. If they die, the remains do not wash to shore. The local human colony has been instructed to avoid the mats, until we can study them."

"Of course, humans don't always obey rules," said Dr. Diop. "But we haven't heard about any encounters."

"The locals say the mats are dangerous," Captain Bombay put in. "They know we're killing their relatives, the ribbons, and they don't like it."

Dr. Johannesburg frowned. "Where did you learn this?"

"Where you learn everything in a harbor town. The bars."

Dr. Johannesburg waved a hand in dismissal. "Humans have always made up stories about monsters in deep water."

"Dangerous how?" asked Dr. Diop.

"The stories vary. But one crew woman told me—granted, she was not entirely sober—that she knew of two boats that never came home after going into the regions where mats are found. One sent a final radio message, something about its engines failing, and then, 'Oh my God, the mat!'" Bombay spoke thrillingly, like an actor in a bad holoplay.

"Ridiculous!" said Dr. Johannesburg.

"You're almost certainly right," the captain said. "The boats were fishing trawlers that vanished in bad weather. The *Persistent* is a far more powerful ship, and we have state-of-the-art instrumentation. I expect no trouble."

"I can't imagine how a mat could sink a boat of any size," Johannesburg added. "Even a dory. Given their structure, or lack of structure, there is no way they can raise themselves from the water. This is simply another monster-in-the-ocean story."

Dr. Diop glanced at Lydia. "Tell K'r'x to be careful."

"Okay."

The next morning, feeling guilty, Lydia put on the radio headset. There was the usual brief interlude in the crystalline world of AI operating systems. Then she was moving through blue, sunlit water. Transparent creatures like quilted bells pulsed around her.

Back, said K'r'x. *I missed you. I never realized—till now—how lonely I have been among the stars. Divers are social.*

A fingered tentacle reached out and grasped one of the bells. Lydia could feel the creature's slippery texture and its struggle to escape.

There is no internal structure, said K'r'x. *Do you see and feel that? I'm learning to be a scientist, like the humans on your ship.* The fingers released the bell. It pulsed away, its motion erratic and its shape lopsided.

Are you sure you understand human science? Lydia asked.

It is to seize and crush or tear, K'r'x said. *Easy for me to understand, since I'm a predator.*

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That is one kind of science, but not the only kind, Lydia said.

What else is there? K'r'x asked as he dove. They were far out now; he did not reach the bottom, but swam among a school of ribbons. She had lost her sense of size, confused by K'r'x's ideas of big and little, but she thought that these ribbons were considerably longer than any she had seen before. They were pale, and edged with narrow bands of fringe, which fluttered as the ribbons undulated. Gills? Tentacles? Sensory organs? Decoration?

There is *watching,* Lydia said.

I will think about that, said K'r'x.

She stayed with him for some time. He was quieter than before, less exuberant. Lydia could enjoy the strong rhythm of his muscles as he swam, the rush of cold water through his gills; the alien flavors on his tongue, and the animals around them: ribbons of many sizes, bells, and, once, a sphere, perfectly transparent, with a ribbon inside it. Was the sphere a predator? Or the ribbon a parasite? Or was she looking at symbiosis?

Finally a new voice said, *Lunch time.*

What? asked Lydia.

That is my AI, K'r'x said. *It's repeating a radio message in a form that you and I can understand.* He beat his broad fins, driving both of them toward light. *You are to go back and eat a delicious human lunch, while I must satisfy myself with dead fish. Do you have any idea how unpleasant it is to eat food that isn't thrashing?*

No, Lydia said. I almost never eat food that moves.

Hard to believe or understand.

A moment later, she was in her cabin, the headset in her hand. Her head ached slightly, and she felt disoriented. The ship moved, but she no longer did. The air in her lungs felt wrong. She breathed in and out a few times, until it seemed like a natural action. Then she took a shower, put on new clothes, and went to lunch.

This time, Dr. Johannesburg waved her to a table with him, Dr. Diop, and Too Ziri. Lydia filled a plate at the buffet, then joined them. The humans all had salads, products of the greenhouses around Newtucket Town. Ziri had something that looked like a piece of flat bread covered with fish eggs.

"K'r'x is complaining about his food," Lydia said. "It's dead."

"We can't bring enough live fish to feed him," Dr. Diop said. "The ship live wells aren't large enough, and we need them for our specimens."

"I understand the problem," put in Ziri. "My food must be shipped from off-world. I long for something fresh. But science requires sacrifice."

Looking at Dr. Johannesburg wolfing down his salad, Lydia wasn't sure. He didn't have the appearance of someone who had sacrificed much in his life.

She ate lightly, feeling unsettled by her visit with K'r'x.

"What happened?" Dr. Diop asked.

Lydia described the bells, the fringed ribbons, the transparent sphere.

Dr. Diop rose. "I'm going to ask K'r'x to gather samples. As far as I know, the sphere is entirely new, and I think the ribbons in this region may be new as well. When these creatures wash ashore or are lifted out of the water by a net or trap, they lose their shape. Whatever structure they may have collapses, and we are left with a flat gelatinous mass, which is often damaged or incomplete. How do we know what we have?"

She left the table. Lydia took her plate to recycling, then went on deck, carrying a cup of tea. Clouds were coming from the west, mid-level and puffy. They cast their shadows on the gently rolling ocean. Lydia drank her

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tea, which was hot and sweet, and watched the water. A disk floated, rising and falling. It was at least two meters across and dull orange-brown. Like the yellow disks, it had radiating grooves.

She knew she didn't have the kind of mind that made a scientist. Instead, she was like K'r'x, a predator who came into situations and grabbed whatever seemed interesting or usable. But there was something tempting about the idea of spending one's life studying something closely. As a child, she had wanted to be a paleontologist, a very pure form of science on her home world, since none of the fossils there had anything to do with human evolution. Later, she had studied history, a far less pure form of science. Then she had become a revolutionary, and then a prisoner. At that point, she had gone back to reading about evolution. It was more restful than history, given her situation at the time. Finally, the AIs came to her with an offer she could not refuse: if she would take an observer into her nervous system, they would arrange her release from prison.

Thus we came together, said the AI inside her skull with a tone of satisfaction.

How do you like K'r'x? Lydia asked.

I prefer you. He's too forceful, and I don't think his AI is doing a good job with him.

Is it supposed to do a job? Lydia asked. Aren't AIs supposed to observe and not interfere?

Yes. Her AI fell silent.

The disk in the water was joined by ribbons. They were the same shade of orange. Lydia went to find Dr. Diop. She was in the ship's comm room.

Glancing at Lydia, she said, "We are lowering plastic containers, large enough to hold specimens and enough water to—I hope—keep them alive and undamaged."

"Tell K'r'x to be gentle," Lydia said. "I saw him damage a bell this morning."

"I've already told him. It's a problem."

"How many animals on this world are predators?" Lydia asked.

"Aside from K'r'x? Many, but almost all prey on microorganisms. I do not entirely agree with Dr. Johannesburg about structure, but there's no question that the animals here lack teeth, beaks, mandibles, claws, and anything else that might be used for seizing and cutting. They also lack jaws and digestive systems capable of handling anything large. Why do you ask?"

"I was wondering if some of them are predators, symbiotes, or maybe different forms of the same organism. I've seen disks—coasters—twice now. Each time there were ribbons around them."

Dr. Diop smiled. "Both ideas have occurred to us. But we lack data. There is one team of genetic engineers on this world, and they're in the fish fjord, trying to create a fish that can live in Newtucket's oceans and be eaten by humans. They've learned a fair amount about ribbons, since ribbons are the fish food of choice. But they don't have time for the rest of the biosphere. I do what I can with taxonomy; it isn't enough; I am only one person."

They went on deck. The ship was plowing through a school of dull orange disks. As far as the eye could see, they dotted the ocean. Looking down, Lydia saw the that water was full of orange ribbons.

"Do we know what this means?" Dr. Diop said, gesturing out. "No. Though Dr. Johannesburg is right in saying that all these animals are chemical factories. Many of the chemicals are excreted into the ocean. What are they

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for? Defense, we suspect, and possibly predation. The local fisher people find ribbons floating dead in the water, with little disks stuck all over them. Dr. Johannesburg suspects that the disks produce a poison, which they use to kill the ribbons. Then they attach themselves to their prey and dissolve it." She frowned.

"Some of the chemicals may be a form of communication. I believe so. Maybe these disks have called the ribbons to them. Why? I don't know."

"There's a lot that isn't known about life here," Lydia said.

Dr. Diop nodded. "Humanity has settled on tens of worlds and is exploring hundreds more. Scientists are behind everywhere."

"Aren't you afraid of something bad happening?"

"Oh yes. It has already and will again. But there's no way to stop this expansion, unless the AIs refuse to let people use their star gates, and they haven't."

This is correct, her AI said.

"Humans spent too much time on Earth while it was dying. They aren't going to sit on another overcrowded planet, waiting for scientists to make decisions. So they go out and settle, and we hurry along behind, trying to figure out what the species has gotten itself into this time." She sighed.

"Some colonies are prudent. Others are not. Some worlds are more dangerous than others. The people of this world are not foolish, but the colony here is small and short of money, and the colonists are determined to make it work. That means practical science, rather than pure research. Our grant is from off-world. We'll do what we can with the money we have, then leave.

"We have just received new images from the satellite above us. The mats are drifting farther west than usual, and one of them is well outside their range. We've issued a warning to trawlers. We should reach the mat in question in less than two days."

Dr. Diop left. Lydia looked at the ocean, dotted with disks and the shadows of clouds. Why do you let humans through your star gates? she asked the AI.

If we do not let your kind disperse, there will be another disaster like Earth. We don't give human colonists access to worlds with intelligent life; as for other worlds—the universe is full of life, and for the most part it's resilient. It isn't small invasions that destroy a biosystem, but rather massive insults.

Some colonies will be destroyed. Some will learn to live in their new environment. In a few cases, the colonies will manage to do permanent harm to their new home world. Change is inevitable, as you ought to know from your study of evolution.

What if humans over-reproduce? Lydia asked.

As you did on Earth? It doesn't seem likely to us that every colony will be so foolish. If some are—well, we rescued you from yourselves once. We need not do it again.

What would you do? Lydia asked, feeling a morbid interest. Shut down the colony's star gate?

Most likely, yes.

And leave the colony to die, since FTL was an AI secret, Lydia concluded.

Her AI said nothing.

The sky darkened. The giant appeared, its crescent wider than before. Obviously, it was waxing. Two moons accompanied it; both had visible disks. Leaning on the ship's rail, Lydia put on her headset. For a moment, she felt

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K'r'x inside her, looking out her eyes. *You are so small and vulnerable! Your vision is so poor! And this scene lacks interest. Come to me. Be strong! And in the midst of beauty!*

A moment later, she was inside him, looking out his eyes as he swam well below the surface. Transparent, quilted bells shone blue-green in the blackness; ribbons were gold or silver. Schools of tiny animals, too small to have visible shapes, were like red-shifted galaxies.

I told you I'm lonely, K'r'x said. *The sensation grows. I want kinfolk to swim with; women for mating; tiny, adorable Diver children to care for; vigorously thrashing, crunchy armored fish to eat.*

Can you go home? Lydia asked.

My AI says yes. But it will be expensive. I have the money. I am paid for my work, and my only expense is fish.

Well, then, said Lydia.

If I go home, I will miss the stars and you, Lydia. No one has ever spoken to me so closely. You are inside me, like an egg in a Diver woman, and I am in you, like a glob of sperm that has been deposited.

What a gift for language the Diver had!

It's the fish that are the real problem, K'r'x went on. *I'm not especially paternal. Sex is nice, but one can't make an entire life out of mating. I would like to swim with other Divers again. You cannot imagine how it feels, when a school travels together. The common joy! The camaraderie! Most of all, I would like to bite into a living, healthy, frightened, struggling armored fish.*

You need a vacation, Lydia said.

What?

A trip home to swim and hunt fish and mate.

K'r'x was silent for a while, continuing to swim in the luminous dark.

We have no such thing, though our men—and some of our women—have a wanderjahr before settling down to raise children. This is how we explore the ocean, locating new places that are safe for children, new sources of fish, new kinds of strangeness to put into stories.

Some men never settle down. I am one, though I have traveled farther than other wandering males.

What about the women? Lydia asked. Do they all settle down?

A few wander their entire lives, coming back now and then to share information. They don't have children, of course. Our young are vulnerable and must be raised by many adults working together. Only a madwoman would stay by herself after becoming pregnant.

If I worked long enough I could manage to go and return, he said after another period of silence. *But in a few years, I'd be lonely again. What then?*

Go on another vacation, Lydia said.

You are suggesting that I work in order to escape the place where I work, then return to the place from which I have escaped and work some more, so that I will be able to escape again and return again?

Yes, said Lydia.

It seems to me that one ought to either escape or not escape.

What about the AIs? Lydia asked. Won't they help you?

We are interested in anomalous behavior, said her AI. *In revolutionaries, bohemians, travelers to distant places, people who can't or won't go home and live like the rest of their species. Why should we help K'r'x become ordinary? And while we are willing to rescue beings who interest us, we don't intend to make their lives easy.*

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I'll think about this thing you have described, K'r'x said. *What did you call it? A gap? An empty place?*

A vacation, Lydia said.

The next day was rougher. Foam streaked the ocean, and high clouds covered most of the sky. Lydia drank tea and took motion sickness pills. She felt better on deck than below, so spent most of her time there, huddled in a corner where the wind didn't reach, her jacket fastened to the top.

K'r'x could breach, she discovered. When she didn't join him in his submarine world, he exploded from the water beside the ship: his pale sleek body ten meters long, his fins spread like wings, and his tentacles coiled up around his head like petals on an eerie flower.

He hit the water with a splash that put spray on the deck, then was gone.

In the morning, Lydia rose to find most of the clouds vanished. Foam still dotted the ocean, and her stomach was not entirely happy. She joined K'r'x after skipping breakfast. Her discomfort vanished the moment she plugged in the headset. Now, instead of the surface chop, she felt water rushing through his respiration/excretion tubes and the smooth beat of his fins. Looking through his dorsal eye, Lydia saw the shadow of the *Persistent,* surrounded by the upper water's brightness. The vessel had slowed to a crawl. A rope hung down from it; flat pieces of clear plastic were attached at intervals. Using his fingered tentacles, K'r'x removed a sheet and carried it, while he—the two of them—swam. Lydia was silent, afraid of distracting the Diver.

Ribbons fluttered around them. There was a school of small, red spheres covered with rapidly beating cilia. K'r'x passed among them, his fins moving slowly. At last he saw a quilted bell. His fingered tentacles did something to the plastic, and it became a box at the end of a clear plastic handle. A scoop, thought Lydia, as K'r'x scooped up the bell. The box's lid closed as soon as the bell was inside. The trapped animal pulsed more rapidly. Afraid?

Most likely, said her AI.

There is a computer in the plastic, K'r'x said. *It has sensors and the machinery necessary to change the plastic from a sheet to a box. In addition, after the sheet has become a box, the computer aerates the water and monitors the specimen's condition. We never developed this technology. Of course, we don't need it, since we don't take fish—or anything else—out of the ocean.*

Do you ever capture anything alive? Lydia asked.

We are not primitive. We have nets, cages, scoops, harpoons, and scientists. We even have computers, though they are colonies of a very small animal called the "adder." The colonies are large and slow, but excellent at self-repair. They rarely make fatal errors. Evolution has eliminated that trait.

He swam back to the rope and attached the box, then took another piece of plastic. This time he collected one of the red spheres.

That was the day. K'r'x collected alien marine animals. Lydia watched and thought about a planet where computation was done by colonies of marine animals.

Finally, her AI said the ship's crew was having dinner.

She returned to her cabin, which she had never left, of course. But it was hard to remember this, until she was reminded by extreme muscular stiffness and a full bladder. Cursing, she hobbled to the head, then on deck.

The day, which she had almost entirely missed, was ending with a splendid crimson sunset. Setting amid clouds, the sun shed horizontal rays. Wave tops glittered. The troughs between waves were full of shadow. Something lay ahead of them in the east: a line of darkness. A low island?

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Dr. Johannesburg joined her at the prow. "The mat," he said. "We will stop and put out deep water anchors. I don't want to approach the creature after dark."

After dinner, the two doctors went off to discuss the next day's plans. Lydia sat in the lounge with Ziri, the captain, and a couple of crew members, red-brown humans, one a short broad man, the other a rangy woman.

"You're sure this is a good idea?" the red-brown woman asked. "I've heard bad stories about the mats."

"I've heard the same stories," Captain Bombay said. "I don't believe them. That thing out there is a very large hunk of seaweed. It doesn't move on its own; it can't think, even at the most primitive level, and we have no reason to believe it's poisonous. If it is, K'r'x will find that out before we come into contact."

"Maybe it's poisonous to us and not to squid," the red-brown man said.

"Well, then, the scientists will find that out. No ocean is safe, Len. If you're going to worry, find another line of work."

The crew members got out a chess board and set up the pieces. Lydia watched for a while, then went on deck. The ship was anchored now, motionless except for a gentle rocking as waves rolled under it. The engines were still running, but their noise had dropped to a purr. Keeping the ship at right angles to the waves, maybe. Or repowering batteries. How would she know, a child of prairies? She did exercises to get rid of the day's stiffness: a long process that left her feeling relaxed and happy. Leaning on the ship's rail, she looked at the ocean. The giant had set, and the sky was full of unfamiliar stars.

For a moment, she felt nostalgia for the constellations of her home planet: the Truck and its Mechanic, the Benzene Ring, the Settlers, the Rat. No one, however ignorant of astronomy, could miss the Ring. The Rat was also pretty easy, due to its eye: a bright, red star. Once that was found, the rest of the animal could be made out.

Being a city kid, she had not learned most of the others, till she became a revolutionary and took to the hills. There—as here, on this ship—the sky was close, the stars brilliant, and the ability to get around without roads and road maps was important. So she'd learned to find the other constellations. Her favorite remained the Rat, glaring down with its one red eye. To her, it was an emblem of all the creatures and people who survived and had their own agendas, in spite of the best efforts of those in authority.

K'r'x surfaced next to the ship, barely visible in the starlight. She could hear him clearly, his triangular teeth clicking together. A tentacle rose from the water holding a glowing ribbon, went back and then forward. The ribbon sailed onto the deck, where it twisted and glowed. A gift. How sweet. She crouched and looked without touching. It was remarkably featureless: no eyes, no mouth, no fins, no gills, unless the frills along its edges were gills. The frills looked like many small ribbons; they might be its young. The only other structure she could make out was a row of dots along the ribbon's side. Maybe these were mouths or gills. No matter how the animal breathed—through frills, holes, or whatever—it seemed likely air would kill it. She stood and used the toe of her boot to push the ribbon overboard.

K'r'x chattered and dove. Lydia went to bed.

Waking, she heard the deep thrum of the ship's engines. They must be in motion again. She showered, dressed, and went to the lounge.

They were moving east and south. A wide wake spread behind them.

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Looking out a window, she saw the mat: a dark region in the water north of the ship. A hundred meters away, she judged. The animal was floating just under the surface, rising and falling with the waves, so that the entire huge sheet—it extended east, west, and north as far as she could see—undulated gently.

She ate breakfast with several crew members. The two docs were already on deck, planning their approach to the mat.

The red-brown man, Len, said, "The captain is right. All oceans are dangerous, and at least the oceans here are alive and healthy. Even if this trip turns out badly, I'd sooner be on Newtucket than on Earth."

"Have you ever been on Earth?" Lydia asked.

He nodded. "I grew up in an arcology on one of the arctic islands. The ice is long gone, of course, and the ocean has not recovered from the environmental crash in the twenty-first century. It will, given enough time. I didn't have the time, so I left. Praise Allah for the AIs and their gates!"

Lydia went on deck and leaned on a railing, watching the mat. Now and then, a section broke through the surface. Sunlight flashed off the wet skin. Was it skin?

Too Ziri joined her. For a moment, they stood together in silence. Then Ziri said, "Dr. J wants you to join K'r'x. He wants a close look at the creature, before we on the ship act."

"Anything in particular?"

"Ask K'r'x to go along the edge of the animal, then underneath. We have a recorder. K'r'x has used it before. You, of course, are an expert with recorders."

Soon she was back in her cabin, then in K'r'x's mind. He floated under the *Persistent,* his broad fins barely moving. The strange flavors of an alien ocean touched his—their—tongue, and Lydia felt cool water flows past his—their—gills.

Welcome, he said.

The recorder—a Ljotmal, almost as good as the model she used—descended on a rope. K'r'x took it. His fins beat once, and they were out from under the ship, gliding through sunlit water.

Joy, he cried and beat his fins again, driving them through a school of tiny, transparent ribbons. Looking out his eyes, Lydia saw the animals on both sides, above and below, undulating rapidly and glinting like pieces of glass. A few ended in the Diver's open mouth. He flicked them out with an almost prehensile tongue.

Like gnats, thought Lydia.

That's an animal I don't know. Does it live in oceans?

In the air, Lydia replied, and remembered the summer when her FLPM battalion had been in a marshy northern forest on her home planet. The biting bugs were native to the world and not much interested in humans, though everyone in the battalion had modified DNA, enabling them to eat the local proteins. In spite of this, the humans did not smell like food.

Like the biting bugs, the gnats were native. Only their name had come from Earth. Clouds of them filled the forest shadows. They got in eyes, mouth, nose, ears. Harmless and biteless, but an unending aggravation.

What is a revolution? K'r'x asked. *Is it like the other thing you described? When you leave a place in order to return?*

Not exactly, Lydia said. A vacation is going away from a home that does not change.

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And returning.

Yes. A revolution is an attempt to change one's home.

My home needs no changes. It's a fine place. But I want to visit other places.

And go home now and then, Lydia said.

Yes, K'r'x said, then slowed.

Ahead of them the water was shadowed. They had reached the mat. K'r'x turned, swimming along the edge. His tentacles were curled close to his head, except for the two with fingers. These held the recorder, which was on now. Lydia saw the operation light.

How do you have it set? she asked.

For low illumination and middle distance, though I can see clearly. This machine has poor vision.

In the shadow below the mat, ribbons wriggled, hundreds of them. Or were there thousands? Other animals were intermixed, furry spheres and pulsing bells.

It is characteristic of cold oceans to have a limited number of species, but those in great numbers, K'r'x said. *It seems to me the numbers here are greater than elsewhere in this ocean.*

Saying that, he swam under the mat. At first, Lydia could make out nothing. Then K'r'x's pupils adjusted and she saw the grooves in the animal's ventral surface. They were straight lines, arranged in rows which crossed at right angles. The result was a checkerboard pattern. Where the lines intersected, clusters of cilia wriggled. There was no other visible structure and no variation in color. The entire animal was a single dark hue.

All around them in the shadowy water were ribbons, more ribbons, bells, and spheres. The water's flavor had grown stronger and changed. It was acrid now. Unpleasant.

Is that coming from the mat? Lydia asked.

The taste? I believe so, K'r'x said.

I don't think it likes us.

You are assuming that its sense of taste is like K'r'x's, her AI put in. *Maybe it's signaling friendship.*

Nothing more happened. K'r'x swam under the mat. The water's flavor remained the same.

Suddenly they were back in sunlight, the mat behind them. K'r'x drove toward the surface and, with a mighty beat of his fins, breached. For a moment, they were in air, light blazing around them. Then he returned to the ocean with a splash.

Excuse me if I startled you, K'r'x said. *But it seemed to me I had to do that. Having the mat above me was unnerving; I kept wanting to dive deep or swim rapidly away; the flavor it's excreting is worse than dead and frozen fish.*

They took the long way back, following the mat's edge. K'r'x kept close to the surface, in sunlight. The flavor grew fainter, till it was lost in the ordinary, alien flavor of the ocean.

At last, K'r'x broke through the surface, and Lydia saw the ship ahead of them. Goodby, she said, took off the radio headset and found herself in her cabin. Her clothing was sweat-damp, her body stiff. She crawled off the bed and into the shower. No question, Lydia thought as hot water beat on her skin. The mat was not happy to have them around.

You are being hasty, her AI said.

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You really think it might be friendly.

My impression, influenced by your neurochemistry and that of K'r'x, is that the creature is mean as a snake and almost certainly angry. But your responses may be due to lack of light and a bad taste. Humans are diurnal; and that flavor was definitely something K'r'x did not like.

The AI fell silent as Lydia lathered her hair. Ah! What a feeling! And what a scent! Synthetic replicas of ancestral herbs ran over her shoulders and down her front. She rinsed. The AI said, *I was curious about the phrase "mean as a snake" and checked my copy of the Encyclopedia Galactica. A snake is a legless reptile still found on Earth. It's unlikely to be mean, since meanness is an emotion, and emotions originate in a part of the brain that is not well developed in reptiles.*

"It's a figure of speech, not based on current or recent science," said Lydia, and briskly dried herself. What was that aroma?

Lavender.

"How do you know?"

The label on the bottle. I read it as you picked it up.

After dressing, she went to the lounge. The two scientists were there, along with Too Ziri.

"We have reached the south-east corner of the mat and will stop for the night," Dr. Johannesburg said.

Lydia nodded, and helped herself to various objects on an appetizer tray: pickled cabbage, pickled turnip, and bean curd flavored with the new experimental animals from the Fish Fjord Research Station.

"Cod," said Dr. Diop. "They are a large, hardy, ugly fish that humanity almost managed to exterminate, after they fed Europe every Friday for a thousand years. Now we are modifying them to live here."

Lydia ate a fish curd cake. Not bad.

The scientists excused themselves. They had more work to do. Lydia, tired after her long session with K'r'x, stayed in the lounge and chatted with Too Ziri.

Dinner took place after nightfall. As they settled down to spicy vegetarian wonton soup, the lights went out. Lydia listened for the engines. They had stopped entirely. Jez Bombay cursed and left.

The lights came back on, shining dimly. The engines remained silent.

Jez Bombay returned. "That's the emergency generator. The engines were overheating. We cool with water, as you might imagine, and the engines aren't getting any. K'r'x is going down with a light and find out what's happened to our intake tubes."

"Do you want me to go?" asked Lydia.

Jez shook her head. "This is a repair problem. I'm going to use a regular radio and talk K'r'x through whatever's happening."

Several people left with Jez. The rest ate and speculated. The lights remained dim, the engines silent. Lydia finished quickly and went on deck.

The sky had clouded over. The ocean was dark, except for a glimmer around the hull: repair lights underwater. Looking toward the mat, she saw a region of blackness.

"I have gotten a report," said Too Ziri, arriving next to her. "The water intake tubes have been plugged by ribbons. Hundreds of them, if not thousands. K'r'x will have to dig them out, then cover the tube openings with mesh."

"Was something there before?"

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"Covering the tubes? Yes, but obviously it wasn't fine enough. Some of the crew members say this is a warning. The mat wants us to leave. Dr. J says the mat lacks the resources to want anything."

When she awoke the next morning, she could hear the ship's engines. K'r'x had gone off to rest, she learned in the lounge.

"In shallow water, his species sleep on the ocean bottom, provided it's smooth and comfortable," said Too Ziri. "Out here, he will sleep while floating."

The day was overcast and windy, foam streaking the water. None the less, the two doctors decided they could not wait for K'r'x's return and went to look at the mat. They rode in a small inflated boat driven by a good-sized outboard motor. A crew member went along to manage the outboard. As the boat left, it bounced madly over the waves, tossing up spray.

Not fun, Lydia thought. At noon, they were back. "Dr. J lost breakfast over the side," said Dr. Diop as she climbed on board. "Extremely interesting! We had been surrounded by the ribbons, so close to the surface that we had no trouble seeing them, in spite of the cresting waves and foam. When Dr. J's breakfast hit the water, they vanished. All of them, even those that had not been close to the breakfast. I don't know if the problem was Dr. J's enzymes or the scrambled eggs, but the ribbons certainly responded and with surprising speed."

Diop stood with legs braced against the ship's roll, her head back, her face happy. A good sailor, thought Lydia, who was not. "I don't think the mat is intelligent, still less the ribbons. But they do seem to communicate, and it's possible that they function as a community."

Dr. Johannesburg climbed on board. His black skin had managed to acquire a dull grey tinge. "We're going to have to use K'r'x. He can swim under the turbulence. If you will, Miss Duluth, I'd like you to go with him."

Lydia nodded.

K'r'x breached late in the afternoon. New clouds had blown in: lower, thicker, and darker than the morning clouds. According to Captain Bombay, a storm was coming from the south-west. "I can't afford to lose my engines in a storm. My bet is, the new mesh will stop the ribbons. None the less, we're going to move away from that thing."

"Not until we have samples," said Dr. J firmly.

Captain Bombay frowned. "I'll give Miss Duluth two hours. Then we move."

Lydia put on her headset. Once again, she was in water.

K'r'x said, *I worked hard last night, pulling ribbons out of those holes in the ship's hull. They weren't even edible, and my sleep was uneasy. How could it fail to be? I'm in an unfamiliar part of an alien ocean, with no kin within light-centuries. Now, you tell me, they want me to push sharp instruments into the mat.*

For a couple of hours, said Lydia in reply. Then the captain's moving us away.

Oh, very well. An instrument pack descended on a rope. K'r'x untied it and swam.

The surface above them was like a shattered mirror. Little light came through; the water K'r'x swam through was dim and grey. Lydia thought she could sense the storm's approach, though this was hardly likely. Maybe *he* could, in some way she didn't understand.

He paused just before they reached the mat, opened the instrument pack,

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and took out a large syringe with many tubes. *I plan to swim under the mat until I'm as far as I intend to go. Then I will turn and take samples on the way out.*

Why? asked Lydia.

If I'm going to annoy this creature, I want to do it as I leave. He glided forward slowly, the syringe held in one set of fingers. A hooked tentacle was looped around the handle of the instrument pack. No way it could slide free, thought Lydia. The hooks were ten centimeters long, obsidian-black and barbed.

Do you have a clock? she asked her AI.

Several.

Tell me when we've been gone an hour.

As before, the water was full of animals. No bells this time, but ribbons, clumped together, and spheres, organized into clusters or long chains. The only unconnected animals were tiny disks with cilia along their edges. These zipped past at a speed that surprised Lydia. Their motion seemed Brownian.

Light diminished as K'r'x swam in. Lydia could see little, in spite of the Diver's excellent vision. At last, he stopped and opened the instrument pack. Something came out; a moment later, a brilliant blue-white beam came on.

There is a recorder in the rod, as well as a light. They come on together. How ingenious your humans are! How many tools you make! It must be the way you compensate for your lack of tentacles.

He swept the beam around. Disks shot through it like so many tiny, erratic flying saucers. In the distance was a large, round cluster of spheres. Transparent, they glinted like glass. The Diver lifted the light rod, playing it over the mat's ventral surface. Nothing new was visible. K'r'x swam on.

A human hour has passed, her AI announced finally.

Lydia relayed the information to K'r'x.

My AI has already told me. We will begin here. The light rod was held by one of his spined tentacles now. He lifted it and shone it on the mat, then used his fingered tentacles to adjust the syringe. How convenient! Three hands!

More, actually, K'r'x said, and drove the needle in.

A dark liquid entered one of the instrument's tubes. It was red-brown in the rod's light and moved slowly. Thicker than blood, apparently. When the tube was full, K'r'x pulled the needle out. For several moments, the mat did nothing. Then, it began to shudder. The motion traveled out in waves, like ripples from a flung stone. When the waves passed the mat's grooves, their pattern changed, becoming more complex.

It has noticed, K'r'x said and swam toward the mat's edge. After a while he stopped again and twisted the syringe. A new needle popped out, leading to a new tube. Raising the syringe, he held it against the mat, pressing firmly, but not so firmly that the needle entered. The section he touched lifted slightly, as if trying to move away. *It learns*, K'r'x said. *And what it learns goes from one section to another. Interesting!* He pushed the needle in.

Again, after the needle was withdrawn, the mat shuddered. They kept going. K'r'x had been right to start inside, Lydia thought. The environment here was creepy: the mat above them like a lid, the water dark and filled with peculiar animals. Heading toward daylight, though it might be dim, was reassuring.

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Another stop. K'r'x twisted the syringe and drove it in. A third tube filled. When the needle came out, the mat barely twitched.

I am not enjoying this, K'r'x said. *Though—so far—it's no worse than the time I swam into the Great Abyss and met a Diver twice my size, luminous, without language.*

He stopped a fourth time. As he tinkered with the syringe, disks settled on his tentacles. He shook. The animals did not come off. He whipped the tentacles back and forth. The disks remained.

More disks settled on his mantle and fins. Lydia felt a faint tingling.

Screw this, said the Diver and dove.

No question K'r'x could move quickly. Cold water pulsed through his body as he went down. His fins beat strongly, and his mind made a deep humming sound. What was it? A groan of fear? Or self-encouragement?

The tingling changed to a burning sensation.

Lydia pulled off the headset and ran from her cabin. "The mat has attacked," she said to the first person she met.

It was Len. "I warned the captain and the scientists. But would they listen?"

Shortly thereafter, she found herself telling her story to Jez Bombay.

"We have to get out of here," the captain said.

"Not without K'r'x."

Bombay shook her head. "I can't wait."

Lydia paused a moment, then said, "My AI says to wait."

I did not!

"That settles the question," said Dr. Diop. "No person or planet can afford to make the AIs angry. I'll get the sling ready."

"Sling?" asked Lydia.

"K'r'x can live for some time out of water," said Dr. Diop. "Obviously, he's not safe in the ocean at the moment, and I need to look at his injuries."

"Do you need help?"

Diop looked Lydia over. "You are covered with sweat and obviously distressed. Calm yourself. We may need to talk with K'r'x."

She went on deck. The sky was dark grey, the ocean swell more pronounced. Foam streaked the rolling water.

But I would have, the AI said.

Done what?

Told Captain Bombay to wait. K'r'x is unusual and valuable, and AIs do not willingly abandon one another.

The headset was around her neck, locked into a collar. She unlocked it and put it on.

Darkness. Icy water. Pain.

Back? K'r'x said, his fins beating fiercely. He was no longer heading down, but south toward the *Persistent.* His—their—skin burned.

She told him what Diop had planned.

Good, he said.

Lydia stayed with him as he swam from the black depths into faint grey light. Then, as he rose toward the *Persistent,* she took the headset off.

"Good," said Dr. Diop. "I need to talk to him." The doctor put her own radio on.

Crew members lowered the sling till water washed through it. K'r'x surfaced at one end: a huge pale shape, dark red disks all over him like a pox.

The sling dropped farther. He pulled himself into it, obviously exhausted.

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The sling lifted. His fingered tentacles still held the syringe and the light rod-recorder; one hooked tentacle carried the instrument pack. All the rest of his tentacles were wrapped around the sling's ropes. He was afraid of falling into the ocean, Lydia realized.

The sling came up and over, then down on the deck. The long, sleek body lay almost still, oddly vulnerable now that K'r'x was out of water. His tentacles relaxed, letting go of syringe and light rod. Too Ziri collected these and disentangled the pack. The two doctors descended, armed with knives and a first aid kit.

"That's it," said Jez Bombay. "We're getting out." She left.

Crouching, the two doctors began to pry off the disks. They came off with difficulty and left behind a round, raw-looking, blue-green welt. "A toxin, I suspect," said Dr. J. "Combined with enzymes that have begun to dissolve K'r'x's tissue. The color comes from K'r'x blood, which is blue-green. The disks have eaten through his epidermis."

The Diver's great eyes blinked. Had Diop relayed this information to him?

One by one, the disks came off, going into sample bottles. Diop rubbed salve on the welts.

"How long can he stay out of water?" Lydia asked.

"Hours," said Dr. J. "Though we have to keep him wet. Remarkable animals, like the cephalopods native to our original home. There's a story about a man who had one of them—an octopus—in a tank. The creature pushed the lid off, climbed out and crawled into the man's library. When the man found the octopus, it was pulling books off shelves and leafing through them."

"You're kidding," said Lydia.

"Is it a true story?" Dr. J asked. "I don't know, though I found it in an old database, full of information brought from Earth. In any case, it suggests that cephalopods can survive out of the water for some time, maybe not long enough to read an entire book, but long enough to glance through a shelf."

Did Dr. Johannesburg have a sense of humor? It didn't seem likely.

The ship was moving now, beginning to turn. The doctors finished removing the disks, and a crew member hosed K'r'x down.

Lydia put on her headset. How are you? she asked.

Uncomfortable and angry.

What could she say? She went to him, kneeling and holding out her hand. He took it with one of his fingered tentacles. His skin was rubbery, his fingers obviously boneless, but muscular. She could feel his strength even now.

What a thing it is to travel to the stars! the Diver said.

She stayed beside him, till she realized that she was soaking wet and shivering. Apologizing, she rose. The ship had finished turning and was heading south-west, toward a sky full of grey-green storm clouds. Abruptly, the engines slowed. Captain Bombay came on deck, her dark face wearing a furious expression. "The engines are overheating again. Those damn ribbons must have gotten through the mesh. We're dropping repellent into the water, then sending divers down, since the squid isn't available at the moment."

Lydia went below and changed her clothes. A pity to miss some of the drama, but hypothermia was dangerous.

When she came back up, the repellent was in the water, and the divers were ready to dive. There were two of them, entirely covered by skin-tight,

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black suits. Their masks looked different from the usual kind of diving mask, and they had air packs fastened to their backs, as if they were going into a vacuum. "We decided artificial gills were risky," said Dr. Diop. "They might not filter out all the toxins. So these fellows are carrying their own air supply. Better safe than sorry."

"Toxins?" asked Lydia.

"The disks used something on K'r'x, and those guns fire a poison. We've used it in the past to collect specimens. It's not as harmful to us as to the local life, but it can cause an adverse reaction."

As she spoke, the divers picked up handguns, then flapped their way to the railing and over.

"They have radios," said Diop. "The masks can see over a wider range of light than K'r'x. They should be fine."

Lydia felt a drop of water.

"Rain," said Diop. "The storm has arrived. As William Shakespeare—the deservedly famous European playwright—said, when troubles come, they come not as single spies, but in battalions."

"Yes," said Lydia.

More drops fell; they moved to the lounge. Jez Bombay had a radio there. Messages came from the divers. This time the intake tubes were packed with an translucent sludge, which had apparently managed to ooze its way through the protective mesh. They would suction it out.

"For God's sake, get a sample," put in Dr. Johannesburg.

Jez Bombay glared at him, but repeated the instruction to the divers.

Also, the divers said as they set to work, the water around them was full of limp objects. "Like used condoms," said one diver.

Dr. J opened his mouth. The captain glared again and said, "You'd better collect some of those as well."

"Okay."

Time passed. The rain was a downpour now, and the sky overhead was green. Foam covered the ocean. The ship's motion became increasingly unpleasant.

Lydia went back on deck. Too Ziri was there with K'r'x.

There is so much water I can almost breathe.

After a while, Dr. Diop joined them. "The divers are reporting success. The water around them is clear; apparently the repellent works as hoped. They are almost finished cleaning out the tubes."

Good news, thought Lydia, looking out at the water, so streaked with foam that it was more white than green. When the ship rode up over a swell, she was able to see the mat: a dim shape through driving rain.

"What was the repellent?" Lydia asked.

"Powdered eggs. The cook believes in laying in large quantities of basic supplies, so we had plenty, and it seemed worth a try. If the eggs didn't drive them off, we could use poison."

Lydia laughed.

The divers climbed back on board, helped by crew members. It was not an easy task, the way the ship was rolling.

Shortly thereafter, she heard the engines start, and went down to change into a second set of dry clothes. Was she going to throw up? she wondered as the *Persistent* pitched around her. Maybe it would be a good idea to stay in her cabin for a while. She lay down and felt the ship's motion change.

The pitching was worse now, and she wasn't able to hear the engines

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through the noise the ship made, groaning. Lydia grabbed the headset and ran from her cabin, bouncing off the corridor's walls several times and almost falling as she climbed the steep stairs to the next deck and the lounge. "What in hell?" she asked as she entered.

"The screws are tangled in something," said Dr. J. "It's big, the captain says, and it's dragging us, and the damn engines have started to overheat again."

"More ribbons?" asked Lydia.

"I have run out of theories," replied Dr. J in a grim tone.

Lydia put on the headset.

Enough of this, said K'r'x. *If I'm going to die, I will die at home.*

He wrapped his tentacles, all of them, around the ship's railing, pulling himself up, so his head was leaning over water, while his wide muscular fins braced his body. For a moment, he rested there; then he shifted all his grips and pushed with fins and body, while his tentacles pulled. A surge and he was over, falling into foam-white water.

Lydia stayed with him. The moment he hit water, his fins drove him down, away from the surface turbulence.

At the ship's stern was a huge, twisting mass, barely visible in the dim light. K'r'x blinked. The mass was ribbons, wrapped around the ship's screws and one another. They were not the comparatively small animals she had seen before. Instead, these ribbons were a meter wide and ten or twenty meters long.

This does not look good, said K'r'x and swam closer, moving very slowly, his mind full of caution and irritation. Clearly, he did not enjoy feeling fear.

Why should I enjoy fear, if that's what I'm feeling? I am a top-of-the-food-chain predator. Nothing should frighten me except other Divers.

The water intake tubes were forward of the screws. As K'r'x approached them, Lydia saw other ribbons, much smaller than the ones at the *Persistent*'s stern. As far as she could determine, in the dim light, the ribbons had fastened themselves to the mesh over the intake tubes. Were they trying to get through? Or stop the water's flow from outside? And how could animals without brains have intentions?

K'r'x paused. His eyes adjusted further, and the light below the ship seemed to brighten. At the same time, several of the ribbons let go. Their bodies—no, their skins—floated in the water like deflated balloons. Whatever had been inside was obviously gone. Pushed through the mesh, Lydia decided. The ribbons were using their own internal stuff to plug the tubes.

She took off the headset for the umpteenth time. As usual, she felt a twinge, which was becoming a headache, she realized; in addition, her scalp felt sore around the point where the radio's plug went in. No form of communication was perfect. "It's the ribbons, and you can't use poison. K'r'x is too close."

"Eggs," said Dr. Diop, who hadn't been there before.

"Tell him to get away," said Dr. J. "We may need to use poison."

She gave him the message.

I am very glad to hear this, K'r'x said and dove.

She left the headset off after that. Too much was happening: the ship rolling, crew members sliding on the water-covered deck as they poured first eggs, then poison over the side. They were all wearing life jackets and lines now. Clearly, the situation had become dangerous. Lydia got her recorder and began to record, though little was visible through the lounge's

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rain-streaked windows: dim figures on the deck, surging water beyond. The ship's motion seemed wrong to her, though she was hardly an expert. She ought to be terrified. At some level, she was. But what could she do except her job, being neither a scientist nor a sailor? She doubted the record would be good for much, but kept recording.

A crew member said, "The captain has ordered the lifeboats activated."

"The ship is going down?" Lydia asked, amazed that such a thing could happen in modern times.

"Our power's going, and those damn ribbons are like an anchor, holding us in place. We can't run into the storm or in front of it. If I were a betting hermaphrodite, I'd put money on the ship going over. You'll be better off in the lifeboats."

The next thing Lydia knew, she was on deck, rain drenching her as she climbed into a large white object. There were seats inside. She settled on one. It adjusted to her shape, so she was cradled in rain-slick plastic. Dr. Diop and Too Ziri joined her, along with two crew members.

A top was fastened over them. It was striped, bands of clear plastic alternating with bands that were opaque and faintly grey.

Her seat extruded belts. She locked them around her.

"I think we're set," one of the crew members said. It was someone she hadn't noticed before: a blue-black woman with straight, blue-black hair.

The boat rose from the deck, swaying. Lydia looked up. The bands of clear plastic were already streaked with rain. None the less, she saw an angular shape: the ship's crane. It was lifting them and swinging them out over the ocean. The crane let go. Buddha! The boat splashed down. For a moment, it rode on the ocean's surface. Then the surface rose and pushed the boat over.

Too Ziri said, "Oh my!"

"Please remain calm," said the second crew member, a man.

The boat made a complete rotation around its long axis and rose to the surface upright. Looking out, Lydia saw grey-green water. The ship must be close to them. But where?

The crew woman said, "We are water-tight and have a weighted keel, which means the boat will right itself if it goes over, as you have just seen. The top has osmotic panels, which admit gases, but not liquids. In addition, we have an emergency supply of oxygen, enough drinking water for several days, a desalinization kit, food, a medical kit, a radio that started broadcasting our location as soon as the lifeboat was activated, and—" She made a gesture; lights came on along the boat's sides. "All we have to do now is wait for the storm to end."

"Where is Dr. Johannesburg?" asked Diop.

"In the other lifeboat, I imagine," the crew man said.

"You had only two?" asked Lydia, trying to remember how big the ship's crew was.

"We're using only two. Most of the crew stayed with the captain and the ship."

"They're going down with it?" Lydia asked, feeling horror.

"They're closing the bulkheads and making sure everything is fastened. The *Persistent* is an expensive ship, full of expensive equipment. There's nothing like her within fifty light-years. Jez wants to save her. Most likely, we'll be able to. This isn't the twentieth century. A ship like the *Persistent* is not going to sink, unless something breaches her hull, and there's nothing out here for her to run into. She'll make it."

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"Then why are we here?" asked Too Ziri.

"In case something unexpected happens, and to keep you out of the way. In a time like this, Jez doesn't want to be tripping over scientists."

"Then why was Len so worried?" Lydia asked, trying to ignore the way the lifeboat moved.

The woman laughed. "Len is from Earth and expects disasters, because that's what Earth people have experienced for centuries, and for centuries the fools have told each other that disasters are normal. 'Grin and bear it,' the Earth people say. 'There is no alternative.' Why else would they stay on that miserable planet? The rest of us are from other worlds, praise the Goddess! We believe in hope and action."

"What are your names?" Lydia asked.

"Rajit," said the man, who was brown with delicate features and dark, lovely eyes.

The woman smiled. "Ramona. My parents named me after Ramona Patel. I've wanted to talk to you, but haven't had a chance till now. What is she really like?"

"I'm going to check on K'r'x," Lydia said. She tugged her head and neck free of the seat, then put the headset on.

He was in deep water, too far down for light. Looking through his eyes, she saw only darkness. The water flowing through his mouth and gills was cold and had a faintly bitter flavor. His fins beat rapidly.

Where are you going? she asked.

East. Away from the mat. How is the ship?

They put me and the scientists in lifeboats, Lydia said. Most of the crew stayed to save the ship.

Are you in danger?

Apparently not. Though one of the people in the boat with me wants to know about Ramona Patel.

Who?

At that point, she realized that she was in love with K'r'x. An intelligent being who'd never seen a Stellar Harvest holo and had no interest in the Stellar Harvest stars!

You are not my type, K'r'x said. *I prefer women who are twenty meters long with fins and tentacles.* For a while, he was silent, beating through the darkness. *I have decided to go home. I know I will become bored in time. But right now, I want a predictable environment.*

Lydia returned to the lifeboat. Someone had broken out rations: trail mix, crackers, and water. A radio was on, making crackling noises.

"I can get nothing," said Rajit with disgust.

"You're back among us," said Ramona to Lydia. "I want to know about Miss Patel."

The company policy was to tell lies about their actors, unless the truth was palatable and pleasant. Lydia described a warm, caring woman, devoted to her art and her many fans.

"Why all the husbands?" Rajit asked.

"Ramona *is* impulsive," Lydia said. "And perhaps a little too warm."

"Tell me what you and K'r'x saw under the ship," Dr. Diop said finally.

Lydia described the snarl of large ribbons and the little ribbons emptying themselves into the intake tubes.

"This is extremely interesting. I can't see this as anything except collective action, directed by a plan. In some sense, the life here is intelligent,

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though nothing on the planet has a nervous system as we know such things. Apparently, one can encode thought in complex molecules. Neurons aren't necessary."

She is right, said Lydia's AI. *We will have to evacuate the human colony, since we permit no alien settlements on planets with intelligent life. Then we—with the help of human scientists and possibly of people like K'r'x—will have to study these creatures. Are they all intelligent, or is it only the mats? Is it possible to communicate with any of them? Will any of them want to join the community of intelligent life forms?—I have my doubts at the moment. But who am I to answer any of these questions?*

After a while, Lydia drifted into an uneasy sleep. When she woke, the boat's lights were out. She felt heat, rising from the floor, which was rocking less than before. Was the storm diminishing? She looked out through a clear plastic panel, but saw only darkness. Wait! Above her the sky was glowing. Newtucket's primary shone through a thin patch of clouds.

By dawn, the eastern sky had started to clear. The sun blazed briefly, lighting an amazingly turbulent ocean. Remarkable how tall waves could look, when one was in a little boat.

Rising higher, the sun vanished. All day they plunged and wallowed through grey water under a cloudy sky. Late in the afternoon, Rajit established contact with the air-sea rescue service.

"It looks like we'll be able to pick you up tomorrow," a crackling voice said.

"What about the ship?" Rajit asked.

"Still floating, though just barely. It went over, and the ribbons climbed onto it. That's what Jez thinks happened, anyway. She's lost most of her external sensors, and she's as mad as a wet cat."

The clouds broke apart after dark. The planet's primary, more than half full now, cast a golden light over the ocean. Buddha, it was a lovely sight!

The opaque bands of plastic were changing, apparently in response to changing weather. They were springy rather than hard now, and cold to the touch. Lydia was almost certain she could feel air coming through them. Did she catch a whiff of salt water, as well? Hard to tell, in a small boat with a not very nice emergency toilet. She checked on K'r'x, still swimming east, though closer to the surface; then she went back to sleep.

In the morning, the sky was clear and the water blue, though still streaked with foam. At noon, a helicopter descended, gathered their boat and lifted it into a large bay. Once the bay doors were closed, humans removed the boat's top.

"What a stink!" said one of the air-sea rescue team.

"I'm going to write a report on the sanitary facilities," said Ramona as she climbed out.

"Nothing is perfect," said Rajit as he followed. "How is the ship? And the other lifeboat?"

"The other lifeboat has already been picked up. They had a worse trip than you, from all reports."

"Dr. Johannesburg is not a good sailor," Dr. Diop said.

"You got it," the rescuer said. "The ship is completely enveloped by ribbons, and we are still trying to figure out how to free it."

Lydia climbed out stiffly, followed by Too Ziri. The helicopter bay was cold, with a metal and oil aroma. Safety, she thought. The scent of human machinery, the sound of human voices explaining and complaining. All at once, she wanted—like K'r'x—to go home. She couldn't, of course. She had been

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released from prison with the understanding that she would be *persona non grata* forever on her home planet. The thought made her want to weep.

Someone gave her a cup of hot, sweet tea, and she drank it. The helicopter flew east over the sunlit ocean. By evening, she was back in Newtucket Town. She showered in her hotel room and put on clean clothes, then put on the headset, which she still had.

Nothing. She must be too far from K'r'x. Shit, thought Lydia and climbed into bed.

Maybe she ought to call someone, she thought as she rolled over. But he'd seemed fine the last time she'd been in contact, and she was so, so tired.

She found Dr. Diop in the hotel dining room the next morning.

"Any news?" she asked.

"K'r'x is okay. The air-rescue people saw him breaching and established contact. The *Persistent* is still enveloped. They are going to try napalm. Nasty stuff, but—"

I do not approve, said her AI.

"My AI does not approve," Lydia said, pouring herself a cup of tea, then reaching for the toast and marmalade. It was the real stuff, dark and bitter, made on Earth from Seville oranges by exiles from the mostly underwater country of England. The label on the jar told Lydia all this.

"We expect the AIs to enter a formal protest, but they haven't yet, so napalm will be used. The ship is expensive, and the lives of the crew are—according to old traditions—beyond value."

The human colony will definitely be removed.

Lydia repeated this as she spread marmalade over toast soaked with melted butter. Simple pleasures were always the best.

"We know," said Dr. Diop.

"The mat is intelligent," Lydia said.

"Yes, almost certainly, but also malevolent. Maybe, in time, we will learn to communicate with it. At present, we—and our comrades—do not have the time. There are no perfect decisions, Miss Duluth, unless they are to be found in Stellar Harvest dramas."

Lydia bit into the toast. Melted butter, its taste indescribable, mingled with the sweetness and acidity of marmalade. Wonderful, she thought, and felt guilty about her enjoyment, at a moment when she and the doctor were discussing napalm.

Dr. Diop looked her in the eyes—looked through her, it seemed to Lydia, at the AI. "Do not think we do this lightly. But we can't think of another way to save the ship. We don't think the version of napalm we're using will be fatal, though it will certainly be extremely painful. If it is fatal—well, I would sooner lose the ribbons than my friends."

Lydia finished the toast, though it didn't seem as tasty as before.

That day was spent in rest and slow walks through Newtucket Town. She recorded the harbor, the surrounding mountains, fishing boats bobbing, picturesque façades. The island volcano was still smoking, and the gas giant was visible in the afternoon sky, its bands pale pink and gold.

At sunset she found herself on the harbor breakwater, made of broken stone, with an asphalt path on top. Kids were riding bicycles to the end and back, whizzing past her. Like most humans everywhere, they were black. One boy had a blond pigtail, and one girl had a frizzy, flame-orange short cut. The rest had straight, black hair, which they wore loose. A typical group of kids on a typical human planet, which humanity was about to lose.

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Don't be depressed, her AI said. *The universe is full of habitable planets. These people will find another one just as lovely.*

You have no concept of home, do you? Lydia said.

No.

The next morning, Dr. Diop announced that the napalm had worked. Skins burning, the bombed ribbons had slid into the ocean.

"It sounds disgusting," Lydia said.

"It is," Dr. Diop said. "We are using a modified version of napalm, as I think I told you. Less nasty, perhaps, but still very nasty."

"Why did you have something like that on this planet?"

"The universe is not a safe place, Miss Duluth. Only a fool travels in it without weapons. Captain Bombay is staying with the ship. Most of the rest of the crew is being flown here. The ship will follow at its own speed."

"And K'r'x?" Lydia asked.

"He will arrive after the crew, but before the *Persistent*. According to the air-sea rescue people, the mat has vanished entirely. I suspect the large ribbons were pieces of it. It broke apart in order to attack the *Persistent*."

That evening, when she tried the headset, K'r'x was there. He must have been swimming just below the surface. The water was full of blue light, and clear, colorless spheres floated around him like ornaments fallen from an Exile tree.

How are you? Lydia asked.

My skin still burns and aches where the disks attached themselves. I think, if I slept, I'd have bad dreams. But I don't intend to sleep until I reach Newtucket Town.

She stayed with him as the water darkened. As light ebbed, the spheres began to glimmer; other animals appeared as yellow sparks, which danced around K'r'x.

Very small ribbons, he said. *Transparent and almost invisible, until they begin to shine.*

Have they given you any trouble? she asked.

The native life? No. They must send their messages through chemicals released in the water. Apparently the chemicals do not travel far.

Are you still planning to go home?

Yes. I want to swim with other Divers, and I want to find a large, powerful, attractive, intelligent woman and court her.

Will you stay?

I'll have to. I don't have the money for a round trip, and after this experience, I'm not sure I want to work for scientists again.

She pulled off the headset and lay a while in darkness, thinking about K'r'x. It was impossible or ridiculous for a human woman to feel love for a fifteen meter long, gilled and tentacled alien. Therefore, she was feeling something else: affection for a comrade in battle, the euphoria that follows danger. But if she could have turned—for a while, not forever—into a female Diver, she would have considered doing so.

Most of the ship's crew arrived the next day, looking frazzled. After they had cleaned up, Lydia went with several to a waterside tavern. It was mid-afternoon. The fishing fleet was out. A small sailboat drifted across the almost empty harbor.

Len was with their group. He drank a large ale that was the same red-brown color of his skin, then ordered a second. "It turned out better than I expected," he said. "The mat disassembled to attack us. Did you hear that?"

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Lydia nodded.

"The parts, the ribbons, apparently lost whatever made the mat go after us. Intelligence? Anger? A memory for past harm?—That's what the rescue team told us, anyway, and there was a marine biologist with them. The moment the napalm hit, the ribbons left, just slithered into the ocean and swam away."

What had the mat lost when it divided? Lydia wondered. Memory? The ability to plan? Malice? Would the parts rejoin? If so, would the mat remember its anger and know that it had failed?

This is speculation in the absence of data, her AI said.

True.

The crew members described what it had been like inside the *Persistent,* as the ribbons enveloped the ship and it rolled over, lying sideways in the water. There had been leaks, none dangerous, and a fair amount of damage to things that hadn't been properly fastened down. "We weren't sure how long we'd be trapped," said Len. "So the captain was hoarding power. Is that the right way to say it? Your humanish is close to our English on Earth, but not identical." The corridors and rooms had been dimly lit, the air warm and barely moving. They had eaten cold rations and listened to ribbons slapping against the hull.

"All's well that end's well," another crew member said finally. "Though the government here expects the AIs will order everyone off the planet. That may not be a happy ending."

Lydia took another walk on the breakwater. Once again, it was sunset, and the kids were whizzing back and forth on their bikes. Whitecaps dotted the ocean. A fair distance out, K'r'x breached, his huge body rising out of the water, fins spread like wings.

"Wow! Wow!" a kid cried.

Lydia put on the headset and told him where she was, then scrambled down over the breakwater's broken stones, stopping at the water's edge.

He reached her soon after, a long pale shape gliding just under the surface. Above her, she heard the kids' shrill, excited voices.

He paused in front of her, water washing over his back, his fins rippling just a little at their edges. His tentacles were curled up around his mouth. His frontal eyes regarded her, and she, looking through his eyes, saw herself: an odd, tiny, alien figure.

At the same time as she looked at herself, she looked at him. This close, she could see the marks the disks had left on him. Still round, they were dark green now, the unpleasant hue of aging bruises. They dotted his body and fins.

The rescue team said I should go to Fish Fjord. There are biologists there who can treat my injuries. I wanted to say goodby to you first, Lydia. He uncoiled a fingered tentacle, extending it toward her. She took it. The cold, wet, boneless fingers gripped her hand firmly. In his mind, she felt fatigue and loneliness and affection.

Do Divers do this? she asked.

Entwine tentacles? Of course. We are a tactile species. Though this is the first time I've entwined tentacles with someone who did not belong to my species.

If you get tired of your home, get in touch with me, she told him. I'll talk to Stellar Harvest. They might want to hire you.

I thought your actors were human or humanoid.

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Mostly, yes, Lydia said in her mind. But the company knows the galaxy is full of many kinds of intelligent life. If they use only humans, they are showing a version of the galaxy that is obviously unreal. So they use non-humanoid actors, usually in supporting roles. You might have to start as a villain.

I, who have always kept my posture level and swum straight forward, never turning to the side?

After a moment, Lydia translated this: "I, who have always been upright and sincere?" His mind did not feel affronted. He must be joking, she decided, though she suspected he *was* upright and sincere.

I will consider the possibility of a career in drama, K'r'x added. *After I have become bored with home.*

She sat for some time, holding the Diver's hand. A couple of kids came down finally. "Will it shake hands with us?" asked the girl.

"K'r'x is male," Lydia said. "You should call him 'he.'"

"Okay," said the boy.

Lydia relayed the request to K'r'x. He complied.

"He feels ishy," the girl said.

"He's a guest on this planet," Lydia said. "A member of a scientific expedition. Treat him with respect."

"My mom says we're going to have to leave," the boy said.

"His mom is the mayor," the girl added.

"Because of the expedition," the boy continued. "The scientists screwed up, and now the AIs are mad at all of us. Are you a scientist?"

"No," said Lydia.

"Is he?" the boy asked, waving at K'r'x. The Diver was moving backward into deeper water. In her mind, Lydia heard him say, *Human skin feels so odd.*

"No. He and I were on the expedition, but only as hired help."

"That's good, I guess," the boy said. "Do you know what will happen to us?"

"The AIs will help your families find another world," Lydia said. "And you will settle on it."

"It won't be the same," the girl said.

That was certainly true. Lydia could think of nothing comforting to say. Change is inevitable? The galaxy is full of planets as lovely as this one? Neither remark seemed useful at the moment.

K'r'x lifted a tentacle, this one covered with spines, waved farewell to her, and dove. ❍

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ON BOOKS

Paul Di Filippo

Preface

What would the field of fantastical literature look like if we viewed only the output of the small presses? Judging from my necessarily elliptical survey, quite healthy and alluring, I'm glad to report, with a wide variety of innovative, well-crafted material being published. (And much more than I could cover in just this one installment; watch future columns for continuing reports.) Certainly the proportions differ from the output of the big houses, with short story collections outpacing novels, for instance. But generally speaking, if a strange plague (print-on-demand, the web, e-books) wiped out all the megafirms, science fiction, fantasy, and horror would still flourish.

(Please turn to the end of this column for an alphabetical list of publisher addresses.)

Novels and Novellas

The University of Nebraska, under their Bison Books imprint, has been handsomely repackaging some of the earliest classics of SF. Three new volumes arrive to reawaken an appreciation of our roots. M.P. Shiel's *The Purple Cloud* (trade, $13.95, 294 pages, ISBN 0-8032-9279-1), that astonishing loner's apocalypse, bears one of John Clute's most stirring essays as its introduction. J. Gregory Keyes, in his introduction to H. G. Wells's *The Sleeper Awakes* (trade, $13.95, 302 pages, ISBN 0-8032-9818-8), calls the granddaddy of Matt Groening's *Futurama* "a toy box of ideas," admirably capturing this vigorous novel's spirit. In his Afterword, Gareth Davies-Morris offers an intriguing account of Wells's methods of revision. And in a stunning display of historical reflexivity, Jack Williamson prefaces a novel by his own first editor, Hugo Gernsback, the gadget-filled *Ralph 124C41+* (trade, $13.95, 300 pages, ISBN 0-8032-7098-4), nostalgically bringing a century of SF full circle.

Another welcome reprint derives from an era considerably closer to our present, the cyberpunk period. John Shirley's *Eclipse Penumbra* (Babbage Press, trade, $17.95, 286 pages, ISBN 1-930235-01-1), revised and updated, continues the harsh and unforgiving story of the world's near-future descent into neofascism begun in *Eclipse* (also reprinted by Babbage). Although Shirley writes even better today (witness *Silicon Embrace*, from 1996), this series, "A Song Called Youth," might very well be his signature production, still ringing with the clarion call of a bygone era.

The reissue of Kem Nunn's 1992 noir novel, *Pomona Queen* (Four Walls Eight Windows, trade, $12.95, 224 pages, ISBN 1-56858-176-9) deserves some attention from generous SF readers. Nunn's brand of weirdo noir explicitly derives more from William Burroughs than from Raymond Chandler, and the Lynchian play of apocalyptic stratagems will appeal to anyone who enjoys such more overtly slipstream writers as Steve Erickson. In the course of a single night, Earl Dean, aka

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Johnny Magic, washed-up rock singer turned vacuum-cleaner salesman, will undergo a mad odyssey through the streets of Pomonoa, CA, "the Valley of Quiet Decline," during which he will learn to unravel his own "complex arrangement of interior harmonies, hieroglyphs in an existential code." Stuffed with wild plot twists and unforgettable characters, this book reads like a postmodern version of Frederic Brown's *Night of the Jabberwock* (1951).

Four Walls also brings us "something completely different" in the Monty Python sense of the phrase. Steve Aylett's *Atom* (trade, $14.95, 137 pages, ISBN 1-56858-175-0) finds this young U.K. author in fine fettle, full of drunken wisdom and manic vigor. Taffy Atom, hard-nosed PI in the garish, gory city of Beerlight, gets enmeshed in a case without many landmarks save the preserved brain of Franz Kafka, a case ripe with cartoon violence and droll non sequiturs. Aylett writes like a combination of Walt Kelly, R. A. Lafferty, S. J. Perelman, and Jeff Noon, igniting lines like "I'll tear your face off and use it to blow my nose before you know what's hit you!'" nearly faster than you can assimilate them. At one point in this book, a "subtext bomb" is triggered, with the following result: ". . . it converted the wave range into a living Updike novel, the subtext containing information everyone already knew—the end result was a shallow reality . . ." Well, Aylett is the exact opposite of this bomb, restoring the universe to its weird magnificence.

NESFA Press remedies a major lack by ushering back into print in deluxe omnibus volumes several classic novels by Hal Clement, Godfather of Hard SF. Volume 1 in their ongoing series, *Trio for Slide Rule & Typewriter* (hardcover, $25.00, 518 pages, ISBN 1-886788-06-X), reprints *Needle* (1950), *Iceworld* (1953), and *Close to Critical* (1964), while Volume 3, *Variations on a Theme by Sir Isaac Newton* (hardcover, $25.00, 465 pages, ISBN 1-886788-08-6), contains *Mission of Gravity* (1954) and associational short fiction and essays concerning the hi-grav world of Mesklin. These rich troves of standard-setting, physics-savvy fiction are immense bargains. (Please see the next section for a description of Volume 2.)

NESFA also offers a brand new novel by the venerable yet still plugged-in Charles Harness. The giant giftbox titled *Rings* (hardcover, $25.00, 597 pages, ISBN 1-886778-16-7) contains three classics—*The Paradox Men* (1953), *The Ring of Ritornel* (1968), and *Firebird* (1981)—as well as *Drunkard's Endgame*. This latter marvel—concerning machinations among a shipful of sexy robots and their thousand-year flight from a vengeful humanity—continues to uphold Harness's reputation as a master of recomplicated weirdness. Only Harness could interrupt a suspenseful passage with a relevant scientific aside ("Three billion years ago, deep in the Martian Precambrian magmas, elemental iron was pulling oxygen from its igneous matrix with the formation of magnetite—black iron ore."), and then regain the suspense without misstep. This doomed cybernetic love story has real pathos, thrills and, yes, intentional wackiness galore.

PS Publishing, as mentioned in a previous column of mine that treated Paul McAuley's *Making History*, has conceived a unique scheme. They publish novellas first in limited signed editions complete with introductions by established writers, then arrange for a quartet of the same to appear in a less expensive version called *Foursight* from Gollancz. The three partners to the McAuley story are now available. Stephen Baxter's *Reality Dust*

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(hardcover, $40.00, 67 pages, ISBN 1-902880-11-0/trade, $18.00, ISBN 1-902880-10-2) returns to his Xeelee sequence, staging an intellectual and physical adventure shortly after the departure of the Qax tyrants, in which altered states of reality erupt on Callisto. As usual, Baxter rocks. Ian McDonald also adds to an established cosmos, his Chaga series, with *Tendeléo's Story* (hardcover, $40.00, 91 pages, ISBN 1-902880-13-7/trade, $18.00, ISBN 1-902880-12-9), whose eponymous African female narrator recounts convincingly a brutal history in the face of alien invasion. Finally, Peter Hamilton's *Watching Trees Grow* (hardcover, $40.00, 96 pages, ISBN 1-902880-15-3/trade, $18.00, ISBN 1-902880-14-5), pulls off a miraculous hat trick by combining alternate history, murderous doings, and Extropian speculation into a mesmerizing whole. This stunning performance has to be read to be believed, and takes my vote as the standout in the next *Foursight* volume. Finally, beginning a new sequence, Tim Lebbon's *Naming of Parts* (hardcover, $40.00, 80 pages, ISBN 1-902880-17-1/trade, $18.00, ISBN 1-902880-16-X) is a zombie tale effective more for its understatement than its explicitness. Would modern female zombies conceal their rot with the perfume Obsession? Of course!

Over the past year or so, Brian Stableford had been writing under the name Francis Amery, appearing in *Interzone* with tales about an engaging dole-prole heroine named Molly, who functions as a magnet for weird doings. Now, issued as a fix-up under his own name, the exploits of Molly cohere into a fine gonzo novel with the title *Year Zero* (Sarob Press, hardcover, $39.50, 221 pages, ISBN 1-902309-10-3). Molly's brushes with tabloid greatness include spotting an immortal Elvis in the supermarket, meeting a fallen angel, then the Devil himself, getting abducted by a UFO for a galactic tour, and inhabiting Lovecraftian landscapes in the distant past. Amazingly, with verve and nerve, Stableford keeps the various swaying cars of his millennial joyride linked into a single train that ratchets through an apocalyptic amusement park to a satisfying climax. Bet you can't guess the ending, either!

Avram Davidson's ghoulie, the Boss in the Wall, now has a worthy cousin in Steve Rasnic Tem's and Melanie Tem's *The Man on the Ceiling* (American Fantasy, chapbook, $10.00, 25 pages, ISBN unavailable). This autobiographical meditation by the husband and wife writing team, focusing on mortality, art, and family, boldly conjures up and sternly faces down the three A.M. soul-queasiness every sensitive human being is prone to. Utilizing an innovative structure of alternating differently voiced sections and "plotless" narrative, the Tems summon up a ghostly symbolic presence that spooks more than a dozen serial killers.

Author Collections

I can't recall enjoying a recent collection more than I savored James Blaylock's *Thirteen Phantasms* (Edgewood Press, hardcover, $25.00, 256 pages, ISBN 0-9701306-0-0). Here we encounter Blaylock in all his many moods and modes, from downright silly ("Two Views of a Cave Painting") to disturbingly enigmatic ("The Pink of Fading Neon"). Evoking illustrious predecessors such as Bradbury, Simak, and Jack Finney, Blaylock proves that whimsical surfaces can hide the steeliest armatures. A story such as "Doughnuts" is at once both hilarious and heartbreaking in its depiction of romantic befuddlement. Blaylock's topflight novels have

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earned him recognition as one of the country's finest fantasists. But his short fiction is less well-known (although three stories in this volume have appeared in *Asimov's*), and this career retrospective is the perfect opportunity to become acquainted with Blaylock and his troupe of earnest eccentrics.

Golden Gryphon Press has steadily earned its reputation as an exemplary publisher in the short-fiction arena, issuing one major collection after another in recent months. First up is Richard Paul Russo's *Terminal Visions* (hardcover, $23.95, 237 pages, ISBN 0-9655901-3-5). Better known as a novelist, the insightful and talented Russo-the-short-story-writer should be familiar to *Asimov's* readers, and indeed nearly half the stories in this strong volume hail from these pages. Russo's work reminds me of both William Barton's and John Barnes's stuff: unflinching, ideationally fecund, sparse and somewhat grim. Yet he can still surprise with a bit of whimsy like the closing piece, "View from Above," in which a professional window-washer experiences a loony transcendence. There's not a weak story in this lot.

The second book from Golden Gryphon, Michael Bishop's *Blue Kansas Sky* (hardcover, $24.95, 263 pages, ISBN 0-9655901-0-0), reprints three famously well-received novellas and allows a fourth to make its original appearance. As James Morrow says in his empathetic introduction, "Cri de Coeur"; "Apartheid, Superstrings, and Mordecai Thubana"; and "Death and Designation Among the Asadi" all reveal new strengths and wonders upon re-reading. And the piece original to this collection, the title story, shows Bishop at the top of his powers. This touching coming-of-age tale concerning one Sonny Peacock, savant of the upper atmosphere, set in the Midwest circa 1959 onward, could be Bishop's *Dandelion Wine* (1957). Tonal echoes of *Great Expectations* (1861) occur as well, in such scenes as Sonny's meeting with his criminal uncle Rory at the town dump. This is one magical twister of a tale.

Joe Lansdale steps up with the third offering from Golden Gryphon, *High Cotton* (hardcover, $23.95, 267 pages, ISBN 0-9655901-2-7). In his preface to this "best of" assortment and in his captivating story introductions, Lansdale generously shares peeves, humorous asides, and creative writing tips galore (lots of late-night popcorn brings on profitable nightmares). The stories themselves are strong as corn-likker, packing hefty kicks. Brash and unabashed, Lansdale conducts us through one extreme stituation after another, from a woman's battle with a serial killer ("Incident On and Off a Mountain Road") to the elaborate torture of a man by a jealous husband ("The Steel Valentine"). Humorous pieces ("Godzilla's Twelve Step Program") and alternate histories ("Trains Not Taken") leaven the devil's food cake mix. Lansdale's eccentric losers are a priceless crew, and even through all the blood, the author holds their hands tightly, affirming his sympathy for the mournfully hilarious human condition.

Finally, as the biscuits to Lansdale's gravy on the menu of Southern SF comes Andy Duncan's first book, *Beluthahatchie* (hardcover, $23.95, 288 pages, ISBN 0-9655901-1-9), a winning debut volume. Duncan can charm the pants off a snake with laugh-out-loud tall tales in a regional accent or scare them back on with macabre parables, but he can also juggle pop icons with the best of them. Consider the two stories appearing here for the first time. In "Fenneman's Mouth," the media's propensity for cynical merchandising gets raked over some hot

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satirical coals. And in "Lincoln in Frogmore" a bit of Civil War trivia becomes a lively first-person memoir full of adventure and nostalgia. Duncan has a big heart, a big mind, and a big talent to match.

Award-winning author Kelly Link, along with partner Gavin Grant, has formed a young press, Small Beer, with its secondary imprint, Jelly Ink. Under the former cachet they publish a fine new zine, *Lady Churchill's Rosebud Wristlet* ($3.00, 36 pages, ISSN unavailable). Issue Number 6 features intriguingly surreal fiction by James Sallis and Karen Joy Fowler, among others, and a variety of features. Jelly Ink brings us Ms. Link's own stories in the form of *4 Stories* (chapbook, $4.00, 64 pages, ISBN unavailable). "Vanishing Act" reads like a superior Lynda Barry script, full of suburban cruelty. "Survivor's Ball" recalls a more sophisticated version of the Eagles and their "Hotel California." "Carnation, Lily, Lily, Rose" is a spooky bardo journey. And "Shoe and Marriage" views fairytales through a Carol Emshwiller lens. Taken all in all, these four tales reveal a wide-ranging artist at work. Drink your Small Beer now!

How many of the old pulpsters still walk the earth? Scholar Mike Ashley recently compiled a list of about ten, prominent among whom was Hugh Cave. Now you can sample Cave's work from his prime with *Bottled in Blonde* (Fedogan & Bremer Mystery, hardcover, $29.00, 241 pages, ISBN 1-878252-48-8). These *Dime Detective Magazine* reprints feature the perpetually-drunken PI Peter Kane, an amiably cynical bruiser who's kin to Kuttner's Gallegher. Stirring up the ethnic stew of pre-WWII America in nine slambang adventures, Kane endures beatings, frame-ups, and even the dreaded abstinence from alcohol to solve his cases, all cleverly constructed by Cave. My favorite: "The Screaming Phantom," which features a "haunted" amusement park.

Manly Wade Wellman, sadly no longer with us, also cut his writerly teeth on the pulps, and now the handsomely produced and illustrated (by artist Kenneth Waters) *The Third Cry to Legba* (Night Shade Books, hardcover, $35.00, 305 pages, ISBN 1-892389-07-X) brings back all Wellman's John Thunstone stories from *Weird Tales* and elsewhere, as well as a clutch of capers concerning Lee Cobbett. Both psychic sleuths solved supernatural mysteries with a gravitas that does not preclude plenty of sheer excitement. These remarkably well-constructed tales hold up wonderfully today, providing hours of fantastic pleasure. And Wellman's creation of a prehuman race called the Shonokins has to rank as one of the more original conceptions in the field.

Thankfully, Hal Clement, another old-timer mentioned previously, is still hale and hearty and in print. The second volume of NESFA's *The Essential Hal Clement* project, *Music of Many Spheres* (hardcover, $25.00, 506 pages, ISBN 1-886788-07-8) gathers seventeen stories, several of them novellas, spanning Clement's career, which began with "Proof" in 1942 (included here). With leisurely ratiocination, Clement's human and alien protagonists meet cosmic challenges in odd yet credible venues derived from Clement's scientific acumen. "Sun Spot," in which a team of space jockeys take "Earth's first manned comet" into the Sun's photosphere, strikes me as near perfect. This book belongs on every SF fan's shelf.

Regrettably, editors L.H. Maynard and M.P.N. Sims have put their own business, Enigmatic Press, on hiatus. But as co-authors of fiction, they have an admirable collection out from Sarob Press, *Echoes of Dark-*

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ness (hardcover, $39.95, 178 pages, ISBN 1-902309-09-X). Maynard and Sims write much the kind of classic ghost tale and weird fiction they once chose to publish, stories positioned squarely along the Aickman-James axis. These nine well-crafted shockers traverse the globe for various venues of horror, from tropical islands to suburban Britain. I was much taken with "An Office in the Grays Inn Road," where a husband's death brings ghostly revelations.

Brian Evenson mines a more postmodern vein of eerieness in his *Contagion* (Wordcraft, trade, $11.00, 151 pages, ISBN 1-877655-34-1). His stories are Kafkaesque, Cooveresque, apt to veer off the expected track into startling reversals and juxtapositions, such as the fate of an accidental witness to a lynching in "A Hanging." "Prairie" strikes all the right notes for me, with its ingenious wordplay supporting a surreal adventure reminiscent of Stepan Chapman's work. Evenson's strong set of skills and deep vision have fashioned a worldview uniquely his own.

Michael Swanwick's stories need no introduction from me, especially in this company. Technically adroit, daring, humorous, and ingenious, Swanwick pushes the limits of the genre in every piece. For a knockout demonstration of this ability and ambition, reminiscent of Roger Zelazny in his heyday, pick up *Tales of Old Earth* (Frog, Ltd., hardcover, $25.00, 277 pages, ISBN 1-58394-016-2), which includes nineteen stories that illustrate exactly what tall peaks the geography of the lands of the fantastic contains.

Anthologies

Stunningly designed and illustrated by Chris Nurse, edited by Brian Willis (who also provides the frame-tale), the theme anthology *Hideous Progeny* (RazorBlade press, trade, $12.00, 294 pages, ISBN 0-9531468-3-9) revolves around a single premise: Doctor Victor Frankenstein truly lived, and all his experiments were a success. The many talented authors—among them Pete Crowther, James Lovegrove, and Steve Rasnic Tem—who consider this alternate history have generally produced convergent dystopias, set either in Victorian times or the present, and generally involving war. All well done, but clustering rather tightly around the same bullseye. Some standout divergent visions are Rhys Hughes's "The Banker of Ingolstadt," a David-Bunchish, Barrington-Bayleyish look at future grad students; Paul Lewis's "Dying for a Living," which examines gladiatorial contests; and Lovegrove's "Piecework," which postulates an early death as a privilege of the rich in a world of cheap reanimation. But certainly, this volume as a whole possesses the true spark of life.

Along with editor Patrick Merla, Steven-Elliot Altman, originator of the clever concept behind *The Touch* (ibooks, trade, $14.00, 347 pages, ISBN 0-7434-0715-6), has shepherded into print a distinctive theme anthology with a noble purpose. All the profits from this book—to which the contributors donated their fiction—will be applied to two medical charities, HEAL and FACT. Naturally enough, the topic of the book revolves around an imaginary medical crisis. A race of mutants springs up, whose touch can willy-nilly rob a victim of various sensory abilities. To make skin contact with these so-called Deprivers is to run the risk of going permanently blind or deaf, or suffering a more mysterious impairment. Given this *X-Men*-style bible, most of the writers here have chosen to focus on the interpersonal drama. Dean Whitlock's "Waiting for the Girl from California" is a winner

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in this category, as is Sean Stewart's "Don't Touch Me." Examing the ways Deprivers might fit into society's larger power structures, Harry Turtledove's "The Lieutenant" stands out. Taken as a whole, these stories limn a world sadder than our own, but full of chances for heroism and compassion.

Fat. Say it loud and proud. Not "overweight," not "big-boned," not "husky." Just plain fat. Being fat is the common denominator among the stories in *Such a Pretty Face* (Meisha Merlin Publishing, trade, $16.00, 312 pages, ISBN 1-892065-28-2), edited by Lee Martindale. These tales, which divide roughly into half fantasy, and half SF, all manage to deal with issues of weight, appearance and self-esteem without becoming overly didactic or polemical. Gene Wolfe's "The Fat Magician" rises head-and-shoulders above the work by the lesser-known writers here, but Jody Lynn Nye's "Casting Against Type" remains my favorite, with its giddy notion of a fat man who turns regularly into a were-elephant. Nye manages to stay light when dealing with weight, and that's not easy.

Editor Peter Ruber has accomplished a remarkable thing. Between two covers, he's managed to fairly and evocatively represent the greatness of sixty years of one publisher's history. *Arkham's Masters of Horror* (Arkham House, hardcover, $32.95, 444 pages, ISBN 0-87054-177-3) showcases the accomplishments of this legendary firm, reminding us why the brainchild of Derleth and Wandrei is so fondly thought of today. Ruber opens the collection with a spirited essay defending Derleth and charting the ups and downs of the House that Lovecraft Built. Then come the stories. Picking twenty-two topflight authors from among the many that Arkham has published over the years, Ruber next excavates rare or literally unpublished efforts by them. These stories are bracketed with more of Ruber's fascinating and frank historical exegesis. You'll read forgotten Robert Bloch ("The Bat is My Brother"), overlooked Carl Jacobi ("Dyak Reward"), and early Clark Ashton Smith ("Prince Alcouz and the Magician"), just to name three. This compressed parade of great authors is a heady trip down memory lane, and testament to the visionary power of these dedicated men and women. (For another Arkham House tribute, see below.)

In the lavishly packaged *Strange Attraction* (Shadowlands Publishing, hardcover, $29.95, 445 pages, ISBN 1-930595-00-X), Ed Kramer has assembled a mad carousel of stories revolving around the carnival-themed artwork of sculptor Lisa Snellings. The creepy shadow of Dr. Lao hangs heavily over these pieces, as well as that of Cooger and Dark, but within these crepuscular confines the entrancing stories and poems in this volume work many wonders. Robert Sawyer, not known for his fantasy, weighs in with the tale of an aerialist's devilish bargain ("Fallen Angel"). Mike Bishop has lots of fun with his "Tithes of Mint and Rue," the quest of fat gal Lula Carnahan for love. And Gene Wolfe comes closest to quintessence of Bradbury with his "Pocketsful of Diamonds." Get your ticket now, before this carnal carny moves on to the next town.

Odds and Ends

In its stylish decadence, the graphic novel *Raptors II* (NBM, trade, $10.95, 64 pages, ISBN 1-56163-260-0) reminds me of Lucius Shepard's underrated vampire tale, *The Golden* (1993). Scripted and painted by the talented team of

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Jean Dufaux and Enrico Marini, this lush ongoing saga (about an Illuminati-like conspiracy of vampires who have turned aside from their traditional pursuits yet still crave power) infuses contemporary milieus with ancient cravings. The crimson-clad, vampire-killing team of Drago and Camilla, themselves renegade vamps, stride like Gothic superheroes through a New York ripe for destruction. Read it and bleed.

From what ancient beginnings did modern graphic novels like *Raptors* arise? You couldn't get a better introduction to this topic than Ron Goulart's *Comic Book Culture* (Collector's Press, hardcover, $49.95, 208 pages, ISBN 1-888054-38-7). Something of a companion to Frank Robinson's *Pulp Culture* (1998), Goulart's volume deals with the period from the turn of the twentieth century to immediately after World War II, the Golden Age of comics. Goulart's meticulous, witty text details the jagged, never predestined progression of this medium from newspaper-strip reprints to original stories, a wild tale full of eccentric businessmen, themselves straight out of a typical Goulart story. Crucially, this account is supplemented by over four hundred reproductions of eye-popping cover art in crisp colors. Goulart has chosen to highlight refreshingly lesser-known issues, eschewing, say, *Action Comics* No. 1 in favor of, say, the lurid and improbable *Hangman* No. 3. Consequently even jaded fans will find endless hours of pleasure in this superb coffee-table compilation, in which Goulart shares such tidbits as the Hollywood model for Captain Marvel's looks (Fred MacMurray) and rescues for our delectation such forgotten artists as Ramona Patenaude and Gus Ricca. This is a necessary purchase for all pop-culture buffs.

Identical praise must descend on Robert Weinberg's *Horror of the Twentieth Century* (Collector's Press, hardcover, $60.00, 256 pages, ISBN 1-888054-42-5). With this massive survey of frights and shivers, Weinberg neatly encapsulates without diminishment one of the defining genres of our century. His highly readable text starts by delivering just enough information on the earliest excresences of horror, circa 1765, then blasts off into the more modern instances. Chapters Three through Five were my favorites: the pulps, Hollywood, and comics. Here we see innumerable startling images both familiar and new, all put into an overarching context. Weinberg's plot synopses—a chore Goulart really didn't have to do in his volume—convey just enough of each work to categorize its essential nature. And Weinberg is not hesitant to stand up for horror's artistic potential either, effectively silencing those who would dismiss the whole genre on the basis of its worst examples. This book belongs in every crypt, vault, and dungeon.

How many fanzines started in 1943 are still extant? Maybe only A. Langley Searles's engrossing and professional *Fantasy Commentator* ($5.00, 70 pages, ISSN 1051-5011). Issue Number 52 of this "sercon" zine features an informative profile of the late Doc Lowndes by Mike Ashley and an invaluable interview with editor and scholar E.F. Bleiler—in which Bleiler reminisces fascinatingly about his days at Dover Books—along with many other features, including almost a dozen poems by Bruce Boston and others. Become part of a long tradition and subscribe today!

Darrell Schweitzer exhibits another side of his protean talents in his new poetry collection, *Groping Toward the Light* (Wildside, trade, $15.00, 119 pages, ISBN 1-58715-109-X). Capably mixing supernatural, historical, and autobiographical

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themes, Schweitzer moves among grim shadows with an eye always slanted toward celestial arenas. My favorite poem is the touching "Heretical Gospel," which imagines Lazarus's inner life, post-miracle. If you enjoy Schweitzer's Dunsanian and Lovecraftian stories, you'll surely want this pendant to them as well.

In *Dead Cat Bounce* (Time and Space, chapbook, $5.00, unpaginated, ISBN 0-917053-12-5), Gerard Houarner chooses a unique point of view for his fable: the mind of a mummified Egyptian cat. Houarner's feline protagonist descends into the afterlife, finds he doesn't much like the scene, then wrangles his way back to our mortal sphere. This poignant story manages to mix Don Marquis's Mehitabel with Karloff's Mummy in a charming creepy-funny fashion, a tone captured perfectly in numerous B&W drawings by a mysterious artist known only as GAK.

Two rich and weighty volumes from Samuel Delany, appearing back to back: this must indeed be the Utopian future we've all been promised! The first offering is allusively titled *1984* (Voyant Publishing, trade, $17.95, 351 pages, ISBN 0-9665998-1-0), and consists of fifty-seven letters penned by Delany circa that far-off year, to various friends and strangers. As Delany himself points out from time to time, this careful bricolage of confidences, theorizing, and reportage mimics the welter of his real life while subtly concealing the artificer's hand. We are generously made privy to fascinating details about Delany's artistic, emotional, spiritual, and mundane life—the completion of his *Neveryon* series, his hassles with the IRS, and his recomplicated sexual pursuits, of course—all rendered in his trademark razored prose only a hair less sharp than his work done for the public's eye. Moreover, as a portrait of an age that seems much more remote than mere calendars can convey, this mosaic conjures up a vanished era—the dawn of AIDS, primarily—in vivid colors, scents, and weathers. An old saw claims that the laundry lists of certain writers would exhibit inherent fascination. We might have a near-proof of that here.

In Delany's *Shorter Views* (Wesleyan/UPNE, trade, $22.00, 464 pages, ISBN 0-8195-6369-2), we get his immaculate, sometimes challengingly dense prose honed even finer, and a sharper focus on bounded topics, often arriving in polar pairs. Yet the overall feel of this collection—subtitled "Queer Thoughts & the Politics of the Paraliterary"—is not too dissimilar to the ambiance of the other book, indicating just how seamlessly Delany can stitch together autobiography with theorizing. Directly at the center of the book, physically and thematically, is the essay "The Politics of Paraliteray Criticism," which offers a way of approaching genre literature without hubris or shame. This should be required reading for writers and critics in our field.

That learnéd mastermind behind NESFA Press, Anthony Lewis, updates his *Concordance to Cordwainer Smith* (trade, $13.00, 189 pages, ISBN 1-886778-25-6) in a third edition, thereby providing endless hours of alphabetically arranged fascination for the Smith fanatic. The instructive "Chronology of the Instrumentality" alone is worth the price of this labor of love, and an extensive bibliography of Smith's fiction is sheer lagniappe.

In *Lord of a Visible World* (Ohio University Press, trade, $24.95, 394 pages, ISBN 0-8214-1333-3), the scholarly S.T. Joshi and co-editor David Schultz have created one of the most intriguing "autobiographies" I have read in years. Surveying the entirety of H.P. Lovecraft's

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voluminous letters, they have selected and arranged by the chronology of the subject-matter enough missives to shadow forth the entire span of HPL's life in bright detail. The result is utterly captivating, like listening to Lovecraft himself narrate his day-by-day tenure on this dust-speck in the uncaring cosmos. By turns grim, hilarious, tender, brutal, mundane, or astral, Lovecraft possessed a complex personality utterly unlike any of his peers. What astonished me most was his easy adaptation of a kind of *Krazy Kat / Yellow Kid* vernacular. Not the image most people have of Chthulu's Daddy. Joshi and Schultz provide inter-epistolary annotations that make all references and circumstances clear, and they are to be commended for neither slighting nor exaggerating Lovecraft's racism, part of his era's ambiance. This book belongs on your shelves right next to the *Necronomicon*.

On his own, Joshi has rendered bibliophiles everywhere an immense service by compiling *Sixty Years of Arkham House* (Arkham House, hardcover, $24.95, 281 pages, ISBN 0-87054-176-5). Two historical essays precede an exhaustive bibliography of all Arkham House titles, along with the issues from their two other imprints, Mycroft & Moran and Stanton & Lee. Joshi's notes make for fascinating reading, especially in the appendix concerning "lost" projects. I for one can dream endlessly about the mysterious collaboration between Donald and Howard Wandrei, *The Circle of the Pyramids*, eighty thousand words "triggered by an inspiration of fantastic grandeur." This volume, along with the Ruber compendium cited above, is a fitting milestone in the long history of August Derleth's labor of love, the model for all small presses that followed. Long may Arkham House and its heirs continue.

Publisher Addresses

American Fantasy, PO Box 1059, Woodstock, IL 60098. Arkham House, PO Box 546, Sauk City, WI 53583. Babbage Press, 8740 Penfield Avenue, Northridge, CA 91324. Bison Books, 233 North 8th Street, Lincoln, NE 68588. Collector's Press, PO Box 230986, Portland, OR 97281. Edgewood Press, PO Box 380264, Cambridge, MA 02238. Fantasy Commentator, 48 Highland Circle, Bronxville, NY 10708. Fedogan & Bremer Mystery, 3721 Minnehaha Avenue South, Minneapolis, MN 55406. Four Walls Eight Windows, 39 West 14th Street, Suite 503, NY, NY 10011. Frog, Ltd., PO Box 12327, Berkeley, CA 94712. Golden Gryphon, 3002 Perkins Road, Urbana, IL 61802. ibooks, **<www.ibooksinc.com>**. NBM, 555 8th Avenue, Suite 1202, NY, NY 10018. Meisha Merlin Publishing, PO Box 7, Decatur, GA 30031. NESFA, PO Box 809, Framingham, MA 01701. Night Shade Press, 560 Scott, #304, SF, CA 94117. Ohio University Press, Scott Quadrangle #225, Athens, OH 45701. PS Publishing, **<www.firebirddistributing.com>** or 98 High Ash Drive, Leeds, LS17 8RE, U.K. RazorBlade Press, **<www.firebird distributing.com>** or **<www.razorblade-press.com>**. Sarob Press, Brynderwen, 41 Forest View, Glenboi, Mountain Ash CF45, 3DU, Wales, U.K. Shadowlands Publishing, PO Box 2366, Centreville, VA 20122. Small Beer Press and Jelly Ink, 73 4th Avenue, Brooklyn, NY 11217. Space and Time, 138 West 70th Street, NY, NY 10023. Voyant Publishing, 180 E. Main St. 2nd floor, Ramsey, NJ 07446. Wesleyan/UPNE, 23 South Main Street, Hanover, NH 03755. Wildside Press, 522 Park Avenue, Berkeley Heights, NJ 07922. Wordcraft, PO Box 3235, La Grande, OR 97850. ○

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SF CONVENTIONAL CALENDAR

This just in: I'll be the Fan Guest of Honor at Jersey Devil Con (see below). Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of con(vention)s; a sample of SF folksongs, info on fanzines and clubs, and on how to get a later, longer list of cons, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22-L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con 6 months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard. - Erwin S. Strauss

APRIL 2001

6–8—**B-Here-Con.** For info, write: **c/o McNary, c/o Two Moon, 3823 Juniata, St. Louis MO 63116.** Or phone: **(314) 664-7451** (10 am to 10 pm, not collect). **(Web) www.bherecon.50mags.com.** Con will be held in: Villa Ridge MO (if city omitted, same as in address) at the Best Western Diamond. Guests will include: Keith Berdak.

6–8—**ConTraption. www.contraption.org. (E-mail) contraption@contraption.org.** Detroit MI. C. Kiernan, Brite.

6–8—**FrightVision. www.frightvision.com.** Sheraton City Ctr., Cleveland OH. Mumy, Lockhart. Horror film.

6–8—**FederationCon. (+49 821) 219-0932. www.fedcon.de.** Maritim Hotel, Bonn. L. Burton, Arnold. Star Trek.

7–8—**Jersey Devil Con. www.jerseydevilcon.hypermart.net.** Holiday Inn, S. Plainfield NJ. D. Drake, Goulart, Strauss.

7–8—**VulKon. (954) 441-8735. www.vulkon.com.** Orlando FL. William Sadler. Commercial Star Trek event.

12–15—**NorwesCon. (206) 270-7850. www.norwescon.org.** Doubletree Airport, Seattle WA. C. Willis, Eggleton.

12–15—**Fantasm. (706) 369-1561. www.fantasm.i-hwy.net/2001.php3.** Crowne Plaza, Atlanta GA. Jeff Pittarelli.

12–15—**Australia Nat'l. Con. www.sf.org.au/swancon2001.** Rydges Hotel, Perth. Silverberg, R. Love, Pride.

13–15—**MiniCon. www.mnstf.org/minicon/.** Hilton, Minneapolis MN. Ken MacLeod, Jo Walton, Leslie Fish.

13–16—**UK Nat'l. Con. (44 (0) 114) 281-1572.** Hanover Int'l. Hotel, Hinckley UK. Brialey, Plummer, Rohan.

13–16—**Retribution. www.retribution.co.uk.** Radisson Heathrow, London UK. T. Russ, L. Fatjo. Star Trek.

13–16—**OdysseyCon. www.odyssey-con.sf.org.nz.** Grand Chancellor, Auckland NZ. Lackey, Dixon, McConchie.

19–22—**ConFurence, Box 84721, San Diego CA 92138. (619) 223-9482.** Hilton, Burbank CA. Anthropomorphics.

20–22—**Kubla Khan, Box 68203, Nashville TN 37206. rkrimini@aol.com.** Days Inn Airport. Shelly, the Offutts.

20–22—**EerieCon, Box 412, Buffalo NY 14226. eeriecon@juno.com.** Days Inn, Niagara Falls NY. Delany, Clink.

20–22—**StarFest, Box 24955, Denver CO 80224. (303) 757-5850. www.starland.com.** Commercial Star Trek meet.

27–29—**SakuraCon, Box 44976, Tacoma WA 98444.** (253) 535-2395. Holiday Inn, Everett WA. Sargent. Anime.

28–29—**KlingonKon, 6270 Hollow Ln., Medina OH 44256. (330) 764-7967.** Adam's Mark, Jacksonville FL. M. Dorn.

MAY 2001

4–6—**DeepSouthCon, 279 Cheshire Rd., Harpersville AL 35078.** Radisson, Birmingham AL. Green, Ned Brooks.

4–6—**DemiCon, Box 7572, Des Moines IA 50322. www.dmsfs.org/demicon.** Univ. Park Holiday Inn. H. Harrison.

4–7—**UK Nat'l. Star Trek Con, Box 3870, Troon KA10 7PZ, UK. cart@sector14.co.uk.** Radisson, London.

5–6—**HistoriCon, 2f3, 97 Harrison Rd., Edinburgh EH11 1LT, UK.** Int'l. Conference Centre. Byrnes, Sherman.

5–6—**Creation Xena, 100 W. Broadway #120, Glendale CA 91210. (818)409-0960.** Pasadena Cen., Pasadena CA.

AUGUST 2001

30–Sep. 3—**Millennium PhilCon, Box 310, Huntingdon Valley PA 19006.** Philadelphia PA. WorldCon. $160.

AUGUST 2002

29–Sep. 2—**ConJose, Box 61363, Sunnyvale CA 94088. www.conjose@sfsfc.org.** San Jose CA. WorldCon. $140.

AUGUST 2003

28–Sep. 1—**TorCon 3, Box 3, Stn. A, Toronto ON M5W 1A2. www.torcon3.on.ca.** WorldCon. C$170/US$115.

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NEXT ISSUE

JUNE COVER STORY

Hugo-winner **James Patrick Kelly** returns for our next issue, as he has every June for almost twenty years now, this time contributing our cover story, a pyrotechnic, Big Screen, fast-paced, highly-inventive Space Opera, in which a far-future freedom-fighter flees even further into the future (try saying *that* five times fast!) to avoid her oppressors, only to find there some surprises and some challenges even *she* didn't expect, in a sly look at how even the best-laid plans of time-traveling rebels have a way of coming "Undone."

OTHER TOP-FLIGHT FICTION

From the far-future to the recent past, hot new writer **Andy Duncan** returns with a moving, thoughtful, powerful novella that takes us back to the Soviet Union in the days just after World War II for a penetrating, fact-based look at the strange life and stranger destiny of "The Chief Designer"—a life that changed the history of the twentieth century, and perhaps the history of the future, forever. Don't be surprised if you see this memorable novella on next year's award ballots. Hugo and Nebula-winner **Nancy Kress,** one of the modern masters of the form, returns with a taut and suspenseful study of bioterrorism, and its far-reaching and unexpected consequences, in "No Such Things Grow Here"; new Scottish writer **Charles Stross** makes a dazzling *Asimov's* debut by taking us to a frantically fast-paced, data-drenched near future, where the information economy is now roaring along fast enough to make the Information Superhighway look like a bike-path, things are heating up enough to boil some "Lobsters"—virtual and otherwise; **Kage Baker,** one of our most popular and prolific authors, spins a wry and spellbinding "Monster Story"; and the Queen of Gonzo, **Leslie What,** gives us her own unique take on what it means to be "Paper Mates."

EXCITING FEATURES

Robert Silverberg's "Reflections" column shows us why "The Center Does Not Hold"; and **Norman Spinrad's** "On Books" column takes a sharp look at "Transcendence"; plus an array of cartoons, poems, and other features. Look for our June issue on sale at your newsstand on May 1, 2001, or subscribe today (you can subscribe online, at *http://www.asimovs.com*), and be sure to miss none of the great stuff we have coming up for you this year! Remember that a gift subscription to *Asimov's* makes a great present *any* time of the year!

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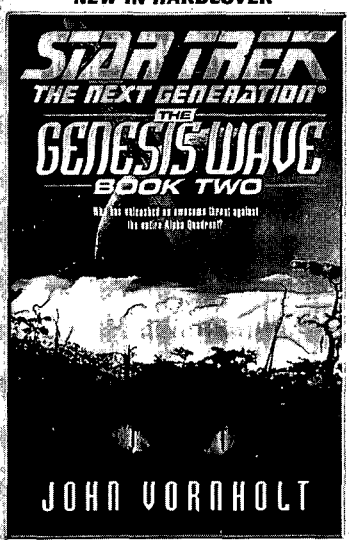

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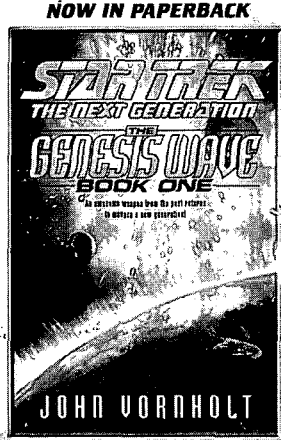

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